

SOAP



October, 1956

and Chemical Specialties

In this issue...

From mine to kitchen sink
British detergent firm aim

* * *

Automobile maker's view
automotive specialties

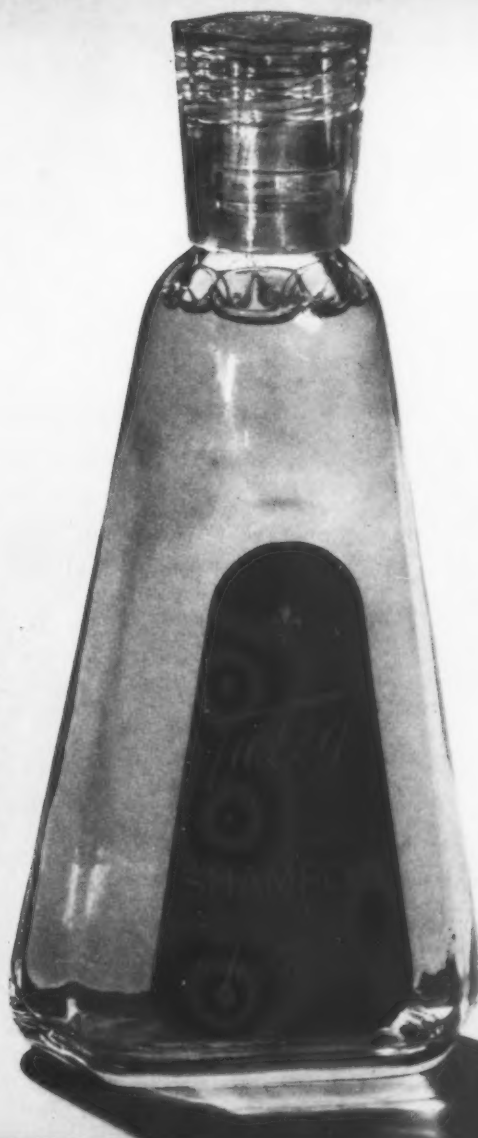
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Power cleansers based on
century old sulfamic acid

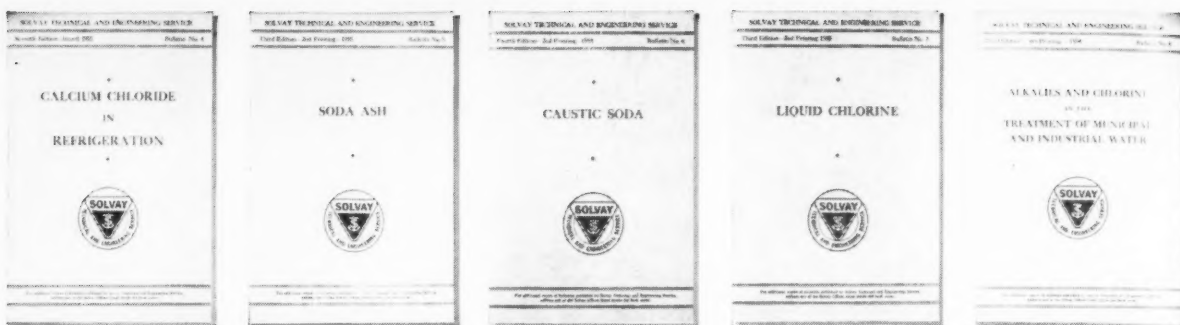
* * *

Role of activators in non-
flammable paint strippers

New "Tweed" soft fragrance
shampoo of Lenthéric, New York,
features jewel-like amber plastic
cap that matches product color.
Brown label, printed with blue
type, carries use instructions on
rear. Bottles by Wheaton Glass
Co., Millville, N. J. Cap by Mack
Molding Co., Wayne, N. J.



-5-



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OCTOBER, 1956

3



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SOAP

and Chemical Specialties

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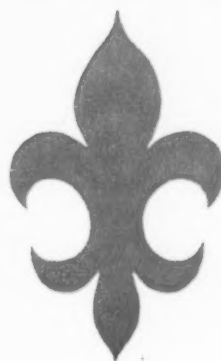
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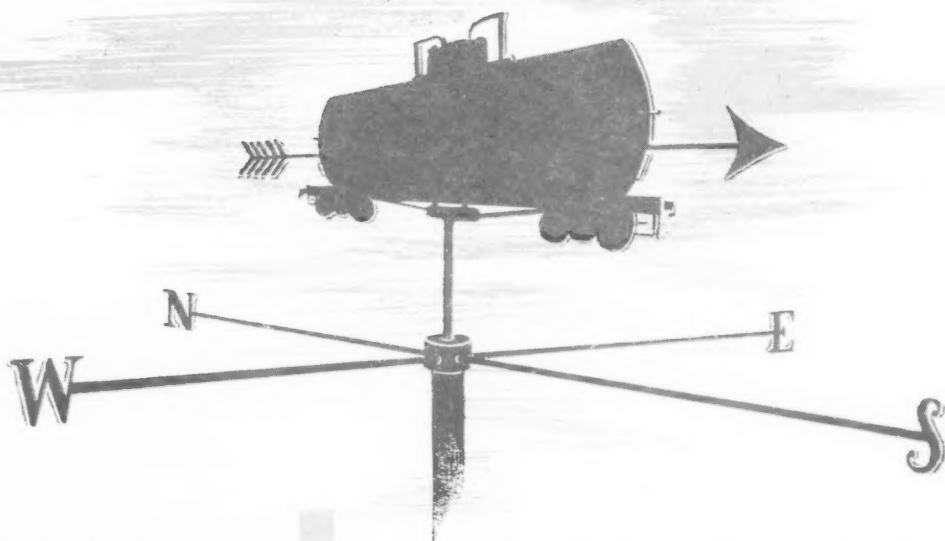
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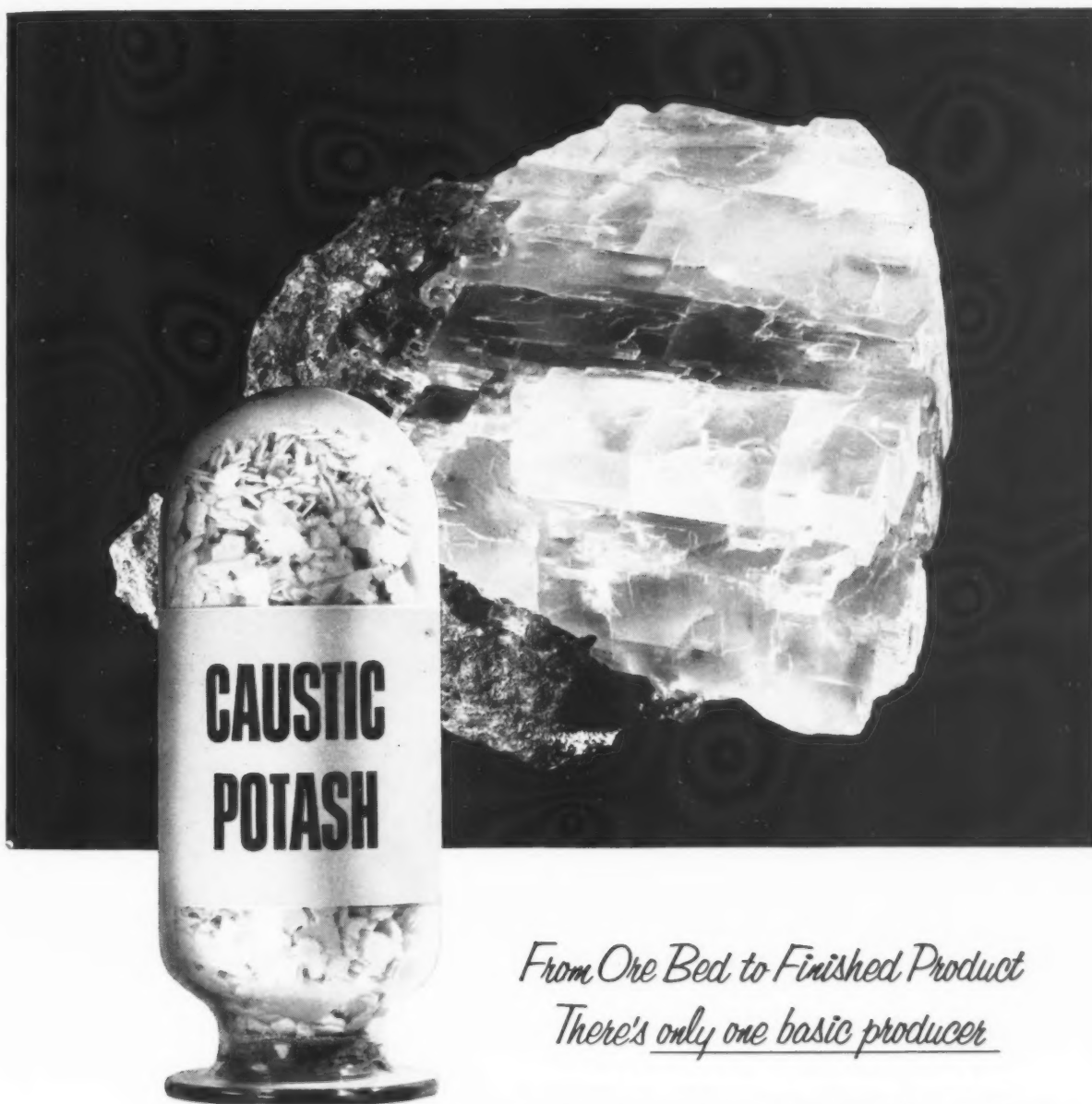
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1947

After Closing...

Bon Ami Names McDonald

Bon Ami Co., New York, an affiliate of United Dye and Chemical Corp., recently an-



John A. McDonald

nounced the appointment of John A. McDonald as general sales manager for the United States and Canada. Mr. McDonald formerly was with Durkee Famous Foods as southeastern sales manager.

In New Pacific Borax Post

Pacific Borax Co., Division of United States Borax & Chemical Corp., New York, recently announced the appointment of Roger W. Hinchman as general sales manager. Mr. Hinchman was formerly the firm's eastern sales manager.

In his new post, Mr. Hinchman will supervise the sales of the company's industrial and agricultural divisions. Since joining Pacific Coast Borax in 1941 he has served as west coast and midwest sales representative in addition to eastern sales manager.

In New Stauffer Post

Stauffer Chemical Co., New York, recently announced the addition of Billy Dean Scallorn to the technical staff of its Hammond, Ind., plant. Mr. Scallorn previously worked as a chemical engineer in

the firm's consolidated chemicals division at Fort Worth, Tex.

P & G Expands in Canada

Procter & Gamble Co., Cincinnati, plans construction of a multi-million dollar edible oil plant at Pointe Claire, Quebec, Canada, it was announced recently. The plant will process vegetable oils to make shortenings. Construction is scheduled to begin in late fall and operation is expected by early 1958.

This new unit, which will warehouse all Procter & Gamble products manufactured in Canada, is expected to be enlarged to eventually include a synthetic division which would manufacture and process detergents. It will initially employ 100 persons and help diversify the firm's Canadian activities which are now centered at Hamilton, Ont., where production includes edible and synthetic pack products.

Durrer Visits Europe

E. R. Durrer, president of Givaudan Corp., New York, and its affiliated companies, Givaudan-Delawanna, Inc., Givaudan Flavors, Inc., and Sindar Corp., all of New York, returned last month from an extensive trip abroad. The trip included a visit to Givaudan's research and production facilities in Europe.

Winnicki New Division Head

Henry S. Winnicki has been named president and manager of the newly-created organic chemicals division of Food Machinery and Chemical Corp., New York, it was announced recently by Carl F. Prutton, executive vice-president. Mr. Winnicki was formerly director of engineering and development for the firm's chemical division.

In his new position, Mr. Winnicki will be responsible for the manufacture and sale of all

plastics and organic chemicals produced by FMC which are not directly linked with the operations of one of its other chemical divisions.

Bush To Dragoco

The appointment of Edward A. Bush as sales manager of the New York division of Dragoco, Inc.,



Edward A. Bush

Holzminden, West Germany, was announced recently by Henry G. Gribou, vice-president. In his new post, Mr. Bush will be responsible for the sale of the firm's line of aromatics in the United States.

Mr. Bush, formerly head of the aromatics department of Baird Chemical Co., New York, has been in the perfuming materials field for more than 15 years. He previously had been sales manager of the aromatics division of Rhodia, Inc., New York, and had served with the aromatics division of Dow Chemical Co., Midland, Mich., and the sales department of Bush Aromatics, Inc., New York.

He is the son of B. T. Bush, now retired and living in Florida and one of the pioneers in the establishment of the American aromatic chemical industry.

Lehn & Fink Earnings Up

Net income and share earnings of Lehn & Fink Products Corp., New York, increased sharply to \$963,972 and \$2.47 in the fiscal year ended June 30 from \$200,102 and 51 cents in the pre-

ceding fiscal year, it was announced recently by Edward Plaut, president. Earnings before taxes increased to \$1,538,972 from \$237,102.

Sales increased approximately 12 percent to a record \$25,729,138 from the previous year's volume of \$23,010,615. All divisions of the company contributed to the higher sales, with foreign subsidiaries and branches also reporting gains over last year.

New P & G Cleanser

A new powdered household cleanser was introduced last month to New York State, part of Pennsylvania and New Jersey by Procter & Gamble Co., Cincinnati. The powder had already been test marketed in Midwestern cities.

Tradenamed "Comet" the new product was presented at a press luncheon in the Plaza Hotel, New York City, by H. K. McClain of P&G's research and development department and Howard Besuden, public relations executive.

"Comet" is a green powder exhibiting a clean pleasant fragrance. Demonstrating the product's action Dr. McClain sprinkled the powder over a heavy stain, worked it into a green foam with a few strokes of a wet dishcloth and rinsed it off. The porcelain surface was completely clean without any expenditure in physical effort.

"Comet" bleaches out stains owing to the presence of "Chlorinol," P&G's bleaching and sanitizing agent, without hard scouring action. According to P&G it decimates microorganisms on a surface up to 99 percent. In addition to saving effort this form of action also saves fine porcelain surfaces. The abrasive present in "Comet" is of very fine particle size easy on surfaces and hands. The color serves as an indicator: when it is rinsed away the housewife can be sure that the surface is completely clean.

Packaged in 14 ounce and 21½ ounce containers the product is available from independent and chain grocery stores.

New Detergent Base

A detergent, designed for use in specialized synthetic surface cleaners, is discussed in a pamphlet recently made available by Magee Chemical Co., Bensenville, Ill.

Tradenamed "Multi Base," the product is a combination of non-ionic and anionic detergents, and is said to provide optimum detergency, controlled foam, lime soap dispensing properties, thickening action, and rust inhibiting qualities. "Multi Base" can be utilized in formulas of various synthetic surface cleaners including wax strippers, wax removers, concentrated sanitizing cleaners and concentrated alkali ice removers for mosaic floors.

The pamphlet which also lists the products specifications, suggested formulas and supply sources, can be obtained on request from the company, 325 West Main St., Bensenville, Ill.

At the same time Magee also announced the development of a new waxless floor finish called "Vinilite." Designed for use on vinyl, asphalt, tile and rubber floors, the product is available in 16 and 12 percent solids. It is offered for sale at \$1.47 per gallon in 16 percent solids and \$1.27 per gallon in 12 percent solids.

D&O Aerosol History

"The Aerosol Story," a short history of pressure packaged products, is now available in a 48-page, nine by 12 inch folder published last month by Dodge & Olcott, Inc., 180 Varick St., New York 14, N. Y. The booklet traces the history of aerosols from their war-borne beginnings to the present. A recent consumer survey by du Pont is quoted to define the aerosol market and show its sensational growth in the last few years. Representative pressure packaged products are alphabetically listed.

The principle of the aerosol is explained and different types of products described in detail. Physical properties of fluorinated hydrocarbon propellants are tabulated

and metal, glass, and plastic containers described. Different types of valves, their respective usefulness and limitations are outlined. The chapter on testing deals with corrosion, toxicity, flammability, over-run, and filler safety.

Problems encountered in the perfuming of aerosols and the tests pertaining to this aspect of pressure packaging are outlined. Fragrances are listed by their suitability for different product formulations and sample formulas are supplied for representative pressure packaged products. A premarketing check list is included which was prepared by the product check list sub-committee of the Aerosol Division's scientific committee of the Chemical Specialties Manufacturers Association. A list of contract fillers and suppliers of containers, valves, and equipment is appended.

Colgate Adds Three

Three additions to the home products staff of Colgate-Palmolive Co., New York, were announced recently by Thomas H. Vaughn, vice-president. Ellen Fulmer, Bernice Ballard, and Cora Green have joined the research and development department's staff for evaluating soaps and detergents for household use.

Miss Fulmer has been named supervisor of home economics and will be responsible for the practical laundry testing laboratories. She formerly directed home laundry testing for Monsanto Chemical Co., St. Louis.

Mrs. Ballard has been appointed to the staff of the firm's Launder-Lab cruiser, a mobile laboratory which is used to conduct on-the-spot evaluations of soap and detergent products. She formerly had been active in consumer education with Monsanto.

Miss Green was graduated from Framingham College and received her M.S. degree in home economics from Columbia University. Prior to joining Colgate, she directed product testing and consumer education for L. Bamberger & Co., Newark.

CSMA Program for 43rd Annual Meeting

TENTATIVE program details for the 43rd annual meeting of the Chemical Specialties Manufacturers Assn., to be held at the Mayflower Hotel, Washington, D. C., Dec. 4 and 5, were announced early this month by H. W. Hamilton, secretary. The two day meeting, beginning on Tuesday, Dec. 4, is preceded by meetings of the board of governors and committees and subcommittees of CSMA on Monday, Dec. 3. In addition to meetings of the six divisions of which CSMA is composed, there will be two general sessions at which association business will be discussed including the reports of the officers of CSMA and its counsel and new officers and members of the board of governors will be elected.

Other highlights of the meeting will include the presentation of the 1956 CSMA Achievement Award and the announcement of the winners of the 1956 aerosol packaging contest. Winners of the aerosol packaging contest and the Achievement Award will be introduced and presented with plaques at a general session immediately after lunch on Tuesday, Dec. 4.

Social aspects of the meeting include the group luncheons on Tuesday and Wednesday, the company open houses on Tuesday evening and the cocktail party and dinner Wednesday evening, Dec. 5. The latter is again open to women guests.

All of the aerosol packages entered in this year's competition will be on display during the meeting. The contest is open to any aerosol brand owner or marketer and is not restricted to members of CSMA. There are 10 classes of products in which awards will be made and a best of show. Entries for the contest close Oct. 15.

Program details available at this writing follow:

Tuesday morning, Dec. 6

AUTOMOTIVE DIVISION, Address of division chairman by Harold G. Lederer, R. M. Hollingshead Corp., Camden, N. J.;

paper by Charles W. Todd, Dow Corning Corp., Midland, Mich., subject to be announced.

INSECTICIDE DIVISION, Address of division chairman by Carlos Kampmeier, Rohm & Haas Co., Philadelphia; Panel discussion: "Answers to Labeling, Regulatory, and Toxicological Problems with Insecticides," participants to be announced.

SOAPS, DETERGENTS AND SANITARY CHEMICAL PRODUCTS DIVISION, Address of division chairman by James M. Cloney, General Aniline & Film Corp., New York; paper by Richard R. Egan, American Alcolac Corp., Baltimore, subject to be announced; "Abrasion Characteristics of Household Cleaners," by C. A. Gerardi, U. S. Testing Co., Hoboken, N. J.

WAXES AND FLOOR FINISHES DIVISION, Address of division chairman by H. J. Mellan, Durez Plastics Division of Hooker Electrochemical Co., North Tonawanda, N. Y.; Panel discussion on "The Consumers' Viewpoint"; "New Trends in Floor Maintenance," by Albert J. Burner, Port of New York Authority; other panelists are William Joy, American Telephone and Telegraph Co., New York; Charles A. Peters, director of the building management division, Public Buildings Service, General Services Administration, Washington, D. C.; Daniel Fraad, Jr., Allied Maintenance Corp., New York; Ruel C. Stratton (or H. W. Rapp), Travelers Insurance Co., Hartford, Conn.; and Miss Jane Cornish, Good Housekeeping Institute, New York.

Tuesday afternoon, Dec. 4.

GENERAL SESSION, report of nominating committee; election of officers and board members; presentation of Achievement Award and announcement of aerosol package contest winners.

AEROSOL DIVISION, Address of division chairman by Charles E. Beach, John C. Stalford & Sons, Inc., Baltimore; report of scientific committee projects by W. E. Baulieu, Bridgeport Brass Co., Bridgeport, Conn., chairman; "Aerosol Particle Size," by John C. McCool, B. F. Goodrich Chemical Co., Cleveland; "Analysis of Aerosol Constituents," by Morris Root, G. Barr & Co., Chicago; "Water-Based Aerosols," by Lee D. Callans, General Chemical Division, Allied Chemical & Dye Corp., New York; "Du Pont Survey on Aerosols," by T. D. Johnson, E. I. du Pont de Nemours & Co., Wilmington, Del.

DISINFECTANTS AND SANITIZERS DIVISION, Address of division chairman by A. G. Bowers, Hunt Manufacturing Co., Cleveland; Panel discussion "Problems Involving Disinfectants in Times of Emergency," participants to be announced.

Company "Open House," evening, six to nine p.m.

Wednesday morning, Dec. 5.

GENERAL SESSION, Address of president by Dr. E. G. Klamann, Lehn & Fink Products Corp., New York; report of secretary, H. W. Hamilton; report of treasurer, P. C. Reilly, Reilly Tar & Chemical Corp.; Indianapolis; report of general counsel John D. Connor, of Cummings, Sellers, Reeves and Conner, Washington, D. C.

Wednesday afternoon, Dec. 5.

Joint session of **AUTOMOTIVE AND AEROSOL DIVISIONS**, "Pressurized Packages for Automotive Use," by J. M. Kim-

mel, DeMart & Dougherty Inc., Chicago. Other papers to be announced.

Joint session of **DISINFECTANTS AND SANITIZERS AND SOAPS, DETERGENTS AND SANITARY PRODUCTS DIVISIONS**, "The Use of Quaternary Ammonium Compounds in the Dairy Industry as Influenced by the Revised Appendix F of the Milk Ordinance and Code of the United States Public Health Service," by Myron W. Cucci, Milk Plant Specialties Corp., Rochester, N. Y.; other papers to be announced.

INSECTICIDE DIVISION, "Interesting Facets of Consulting Laboratories," by George S. Kido, Wisconsin Alumni Research Foundation, Madison, Wis.; "The Use of Radioactive Materials in the Studies of the Mode of Action of Insecticides," by K. D. Quarterman, U. S. Public Health Service, Savannah, Ga.; "Attractants and Repellants," by V. G. Dethier, John Hopkins University, Baltimore; "Biological Data Using Formulae Containing Sesamol and the Synergist 2-(2-ethoxy-ethoxy) ethyl 3,4-methylenedioxypheyl acetal," by John H. Fales, U. S. Department of Agriculture, Washington, D. C.

WAXES AND FLOOR FINISHES DIVISION, "Wax Filtration," by T. M. Jackson, Jr., Johns Manville Corp., Celite Division, New York; "Resins for Use in Resin Finishes," by Charles O'Connor, Shanco Plastics & Chemicals, Inc., Tonawanda, N. Y.; "Comparative Evaluation of the Dura Slip Resistance Tester versus the James Machine on Waxed and Unwaxed Flooring Surfaces," by Bernard Berkeley, Foster D. Snell, Inc., New York; report of the scientific committee by Donald E. Whyte, S. C. Johnson & Son, Inc., Racine, Wis.; "Final Report—Floor Finishes, Water Emulsion, Non-Bufferable," by James B. Snider, chief, commodity section 2, Standardization Division, Federal Supply Service, General Services Administration, Washington, D. C.

Wednesday evening, Dec. 5.

Cocktail party, banquet, floor show.

Two C-P Appointments

Two appointments to the research and development department of Colgate-Palmolive Co., Jersey City, N. J., were announced recently by Thomas H. Vaughn, vice-president. Edgar M. Emery and Joseph W. Lyons were appointed to the department's analytical division.

In his new post Mr. Emery will be responsible for supervision of mass spectrometer analysis. A graduate of the University of Michigan, he had previously worked in mass spectrometry for Barrett Division of Allied Chemical and Dye Corp., New York.

Mr. Lyons, a graduate of the National Radio Institute, will be responsible for the management of electronic analytical instruments and the application of photography to research problems.

West End-Stauffer Merge

The merger of West End Chemical Co., Oakland, Calif., into Stauffer Chemical Co., New York, was approved by the shareholders of both companies and became effective Oct. 1, it was announced recently.

Of the 3,076,705 shares of Stauffer common stock outstanding, 2,737,587 shares or 89 percent were voted in favor of the merger while 1,904 shares or .06 percent were voted against. Of the 2,012,197 shares of West End common stock outstanding, 1,709,751 shares or 85 percent were voted in favor, while 8,746 or 0.4 percent were voted against.

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CCDA Study Soap Industry

Soaps and detergents have been scheduled for discussion by the Commercial Chemical Development Association at its November 1 meeting to be held at the Netherland Hilton Hotel in Cincinnati. The morning program will be devoted to a technical session, which will hear Foster D. Snell, president of Foster D. Snell, Inc., New York, giving a "Review of Major Trends in Soaps and Detergents During the Past Ten Years"; J. G. Pleasants, vice-president of research and development, Procter & Gamble Co., Cincinnati, presenting "Comments From the Viewpoint of a Soap and Detergent Manufacturer"; and E. R. Baker, general manager of research and development, Continental Oil Co., New York, outlining "Development Problems of Chemical Concerns Supplying the Soap and Detergent Industry." The technical session will be introduced by Roy Peet, manager of the Association of American Soap & Glycerine Producers, Inc.

At luncheon R. K. Van Nostrand, assistant advertising director of Bristol-Myers Co., New York, will present the "Ban Development Story—Product, People and Planning."

Scheduled for the afternoon are four panel sessions: Market de-

velopments in large volume chemicals in the soap and detergent industry will be studied under the chairmanship of W. E. Elwell, Oronite Chemical Co., San Francisco. A panel on specialty chemical market development in the soap and detergent industry has Carl Pacifico of American Alcolac Corp., Baltimore, as chairman. A panel on application research by the supplying industries in the field of soaps and detergents will be led by A. Steele, Carbide and Carbon Chemicals Co., New York. The fourth and last panel will discuss the establishing of new consumer products in the soap and detergent industry under the chairmanship of R. E. Horsey, Givaudan-Delawanna, Inc., New York.

The panel sessions will be followed by an afternoon roundup in which a summary of each panel's discussion will be presented by the respective chairmen.

A cocktail party and banquet will conclude the meeting. Dinner speaker will be C. R. Whittlesey, Wharton School of Finance, University of Pennsylvania, Philadelphia.

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A.A.P.C.O. Hears Klarmann

Dr. E. G. Klarmann, vice-president and manager of Technical Services for Lehn & Fink Products Corp., New York, and president of the Chemical Specialties Manufacturers Association, will speak at the tenth annual convention of the Association of American Pesticide Control Officials, to be held at the Shoreham Hotel, Washington, D. C., Oct. 19 and 20. Dr. Klarmann's paper deals with the "Relevance of AOAC Testing Methods for Disinfectants and Their Performance in Hospitals."

Pesticide Control Officials will hold a round table discussion on the evening of Oct. 17 on "Methods and Collaborative Check Sample Series." CSMA is tendering a dinner on Oct. 19, at which a meeting of the States Relations Committee will be held under the chairmanship of A. B. Lemmon.

On the main meeting day,

Oct. 20, the group will first hold a business meeting, then hear an address by its president, C. A. Bower, director, Division of Entomology and Plant Industry, Oklahoma City. A paper on "Trends in Research on Chemicals for Control of Insects," by E. F. Knipling, chief, Entomology Research Branch, ARS, U.S. Department of Agriculture, will be followed by Dr. Klarmann's address. The morning session will be concluded by W. B. Ennis, Jr., head, Weed Investigations Committee, ARS, U.S. Department of Agriculture, who will speak on "New Developments in the Weed Control Field." In the afternoon, committee reports will be heard, followed by election of officers and recognition of the past president.

A panel discussion of the every day procedures and problems in the enforcement of Pesticide Laws, moderated by R. H. Guntert, will conclude the meeting.

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Antoine Chiris Adds Three

Three additions to the technical and sales divisions of Antoine Chiris, Inc., New York, were announced recently by F. E. Shoninger, president.

Frank C. Kendall has been appointed head of the newly-created drug and cosmetic sales division while Morgan Gaffney has been named west coast sales representative. William F. Nichol has been appointed supervisor of perfumery research.

Mr. Kendall will be responsible for developing and servicing the firm's drug and cosmetic accounts. He recently had served as general purchasing manager with Warner-Hudnut, Inc., New York. Mr. Gaffney, who will represent the firm's line of essential oils on the west coast, will headquarter in Los Angeles. Mr. Nichol will be responsible for research and development of perfumes and cosmetics. He previously had served for many years in the production and research development department of Harriet Hubbard Ayer, Inc., New York.

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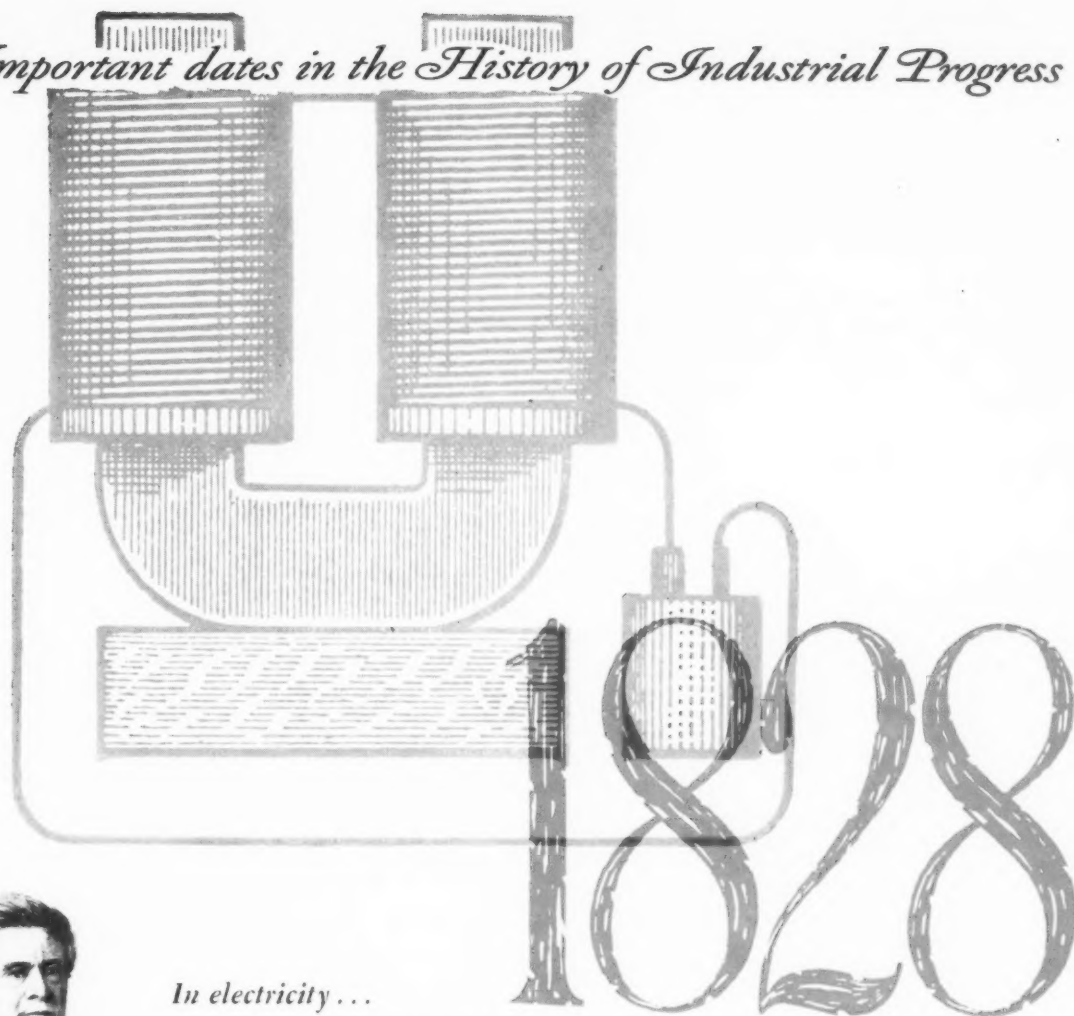
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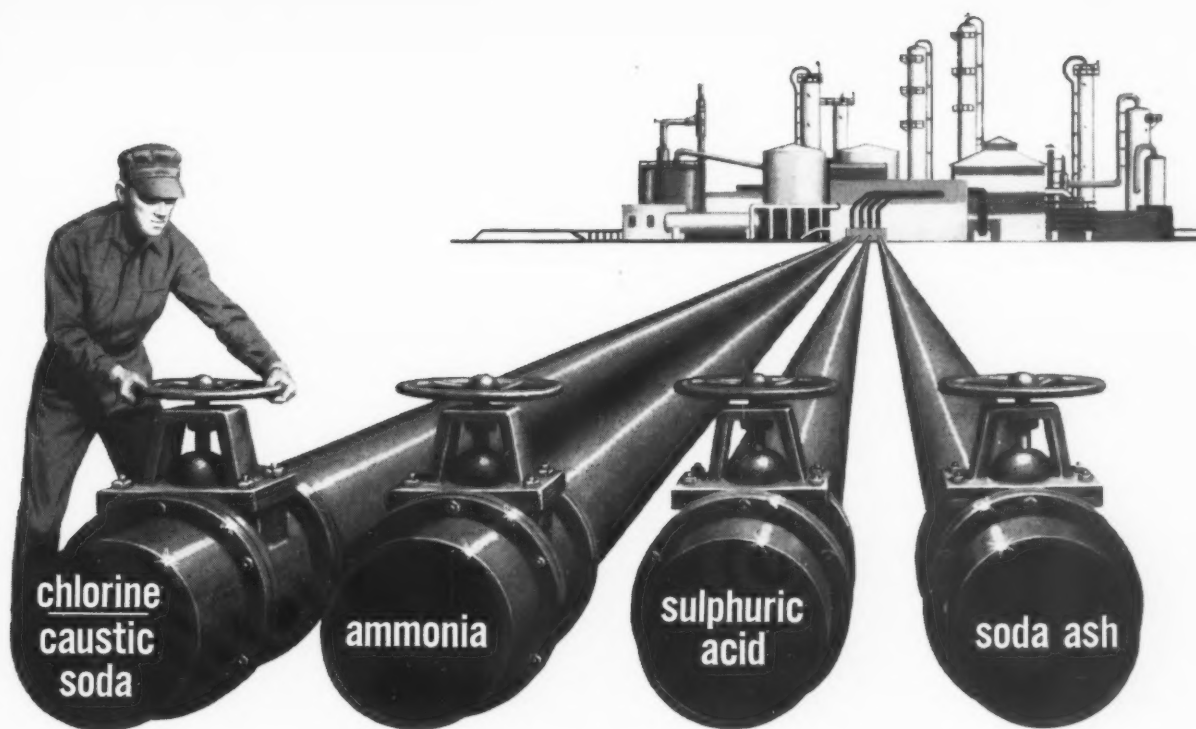
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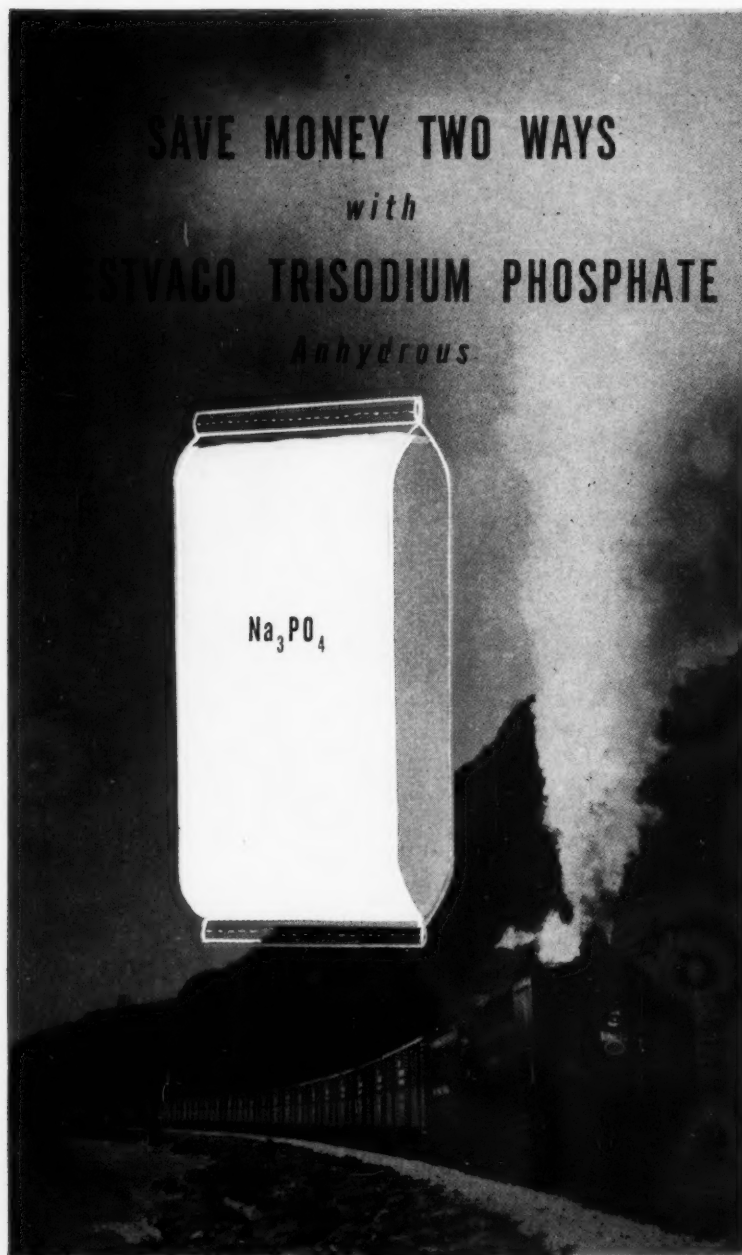
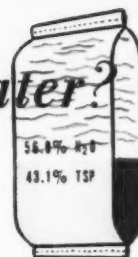


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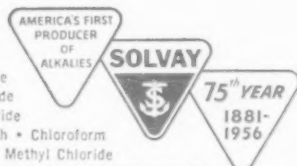
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In liquid detergents, Hercules® CMC holds dirt and even stubborn grime in suspension so that they are always washed down the drain; never wiped off on the towel.

For example, "Neutra-Foam" Skin Cleanser, described by the manufacturer as "one of the new, mild, non-alkaline synthetic skin detergents," contains CMC to help form the rich abundant lather which rinses easily and thoroughly in hot or cold, hard or soft water.

Leading formulators of liquid detergents have discovered that economical Hercules CMC contributes to improved product performance, increased customer satisfaction. If you have not tried CMC for yourself, we'll be glad to send you a testing sample. Write Hercules for full details.

HERCULES



"Neutra-Foam" Skin Cleanser is a product of Stepan Chemical Company, 1353 North Branch St., Chicago 22, Ill.

Virginia Cellulose Department
HERCULES POWDER COMPANY
INCORPORATED
961 Market St., Wilmington 99, Del.

VS56-4



... in brief

as the editor sees it . . .

L GLYCERINE . . . Five years ago, synthetic glycerine comprised about 20 per cent of the total American output. Today synthetic production is almost equal to glycerine from soap kettle and fat splitting. Over these years, there has been a slight drop in soap kettle glycerine, as might be expected, while synthetic production has tripled.

The price cut in glycerine last month focused closer attention on the market, particularly its future. Obviously, if synthetic output continues to grow, as it undoubtedly will, consumption must grow also or the price will go down. Inasmuch as soap kettle glycerine is essentially a by-product, it must be sold whether for six cents or twenty-six cents. And the chances of any further sharp reduction in output are unlikely. Total soap production today is close to what should be low ebb for some time to come.

At lower prices, glycerine use will increase. It always does. So it would seem, all things being equal in the foreign markets and with lower domestic prices, imports might decline. And the market might stabilize itself at figures slightly below or at current levels if there is no further boost in synthetic output in the near future.

* * * * *

L DIVERSIFICATION . . . Soapers producing stuff for the retail markets show a widening trend toward diversification. This trend has been apparent for the past several years, but seems to have become more widespread of late. The movement has been mostly in the direction of chemical specialties, including aerosols, and in food products. If anything ever happens to the detergent and soap market, it's a cinch that these diversifiers don't intend to be caught holding the bag.

From a merchandising angle, chemical special-

ties and foodstuffs are obviously "naturals" for additions to general soap lines. Mostly they go to the consumer through supermarkets and other grocery outlets. So do soaps and detergents. The pipelines of their marketers already are well set up. Manufacturing techniques are not too foreign to soap operations.

Outside of a normal population increase in the years immediately ahead, the chances of materially expanding soap and detergent sales are relatively limited. Those who would expand their markets must look to other things, — which seems to be exactly what a number of soapers have been doing of late.

* * * * *

L MOTH PRODUCTS . . . A lot of misinformation is being bandied about in the newspapers about moth control products. Recently, a technical man for a large chemical company was quoted to the effect that "moth balls are commonly made of paradichlorobenzene." They are not. They are made of naphthalene. Not an important error, but just a tip off on what's being fed to the public.

Then a short time ago, Hal Boyle, an AP scientific writer, stated in one of his columns that "moth balls do not kill moth larvae." Well, the U.S. Department of Agriculture must be wrong then, for they state that, when used in a tightly closed container at the rate of one pound per 100 cubic feet, moth balls *do* kill moth larvae.

Sure, the damage caused annually by moths and carpet beetles is close to a billion dollars and the public is hungry for information on how to prevent this damage. But these items of misinformation, irrespective of which products they affect, hurt the overall moth product market. Maybe none of these products are any good, concludes Mrs. McGuff, our housewife.

Looking For A Consistently Uniform

SODIUM LAURYL SULFATE?

Raymond

IS ALSO A NEW SOURCE
FOR THESE COSMETIC
GRADE RAW MATERIALS:

PENDIT® CA

—a quaternary ammonium compound
(stearyl dimethylbenzylammonium
chloride) manufactured specifically for
use in creme rinses and emulsions of
unvarying physical properties.

"DITHIO"-FREE THIOGLYCOLIC ACID

—"Thio" and its salts produced for
use in permanent waving lotions are
completely free of the oxidation
product dithiodiglycolic acid so
detrimental to the permanent
waving process.

PENDIT® WA COSMETIC

... is a new cosmetic grade sodium lauryl sulfate manufactured by Raymond Laboratories, Inc., 20-year specialists in cosmetic chemistry. The lightest colored sodium lauryl sulfate known, Pendit WA COSMETIC for the first time guarantees built-in uniformity. Nowhere else can you get the same viscosity, the same degree of emulsification, and the stability—batch after batch—without detergent variation problems that necessitate constant formula correction. Practically water-white, Pendit WA COSMETIC is essentially iron free and has a low salt content. Neutral and stable, continuing tests demonstrate unvarying results from lot to lot.

Pendit WA COSMETIC performs admirably as a detergent and emulsifying agent. Extensively used in the preparation of liquid and paste cream shampoos, versatile Pendit WA COSMETIC is also used in shaving creams, dishwashing compositions, car washes, personal cleansing components, and in emulsion polymerization. Pendit WA COSMETIC is shipped in 55-gal. plastic-lined, non-returnable drums and in tank trucks in three viscosity grades: low, medium and high.

REMEMBER

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BUT THE NAME


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AVAILABLE. WRITE FOR SAMPLES
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 **STILL TRYING . . .** In one breath, the retail druggists of the nation demand nationally-advertised brands of merchandise which "sell on sight." They tell us that a product must earn its keep or be removed from precious shelf display space. Then in the next breath, they are asking legislatures over the country to restrict the sale of this or that to stores manned by licensed pharmacists. Many chemical specialties, things as common as insecticides, disinfectants, rodenticides, are included in their lists.

On the one hand, expensive national advertising; on the other, highly restricted sales outlets! Just what sort of a dope do the druggists figure the average specialty manufacturer is? Naturally, he'll fight any such restriction. But year after year, somewhere somehow, the drug fellows pop up with a bill in some legislature designed to channel all the specialty and medicine cabinet items through their stores. Invariably, they get turned down, but they keep trying, trying, trying. Wouldn't it be just as logical to restrict the sale of food, prepared or otherwise, to restaurants and food stores? We wonder how the drug boys would like a deal of that sort.


* * * * *

 **HIGH COSTS . . .** Costs of a hundred and one items merely incidental to carrying on a business today have mounted and are continuing to mount month after month. There seems no end to the steady rise in the cost of everything from steno wages, paper clips to painting the factory walls. New economies in production, if there are any such today, are no sooner made than they are engulfed by the rising cost of incidentals. Just to stay in business has become a costly matter.

As prices for all sorts of sundry services and materials, many not directly associated with the main business operation, continue to inch upward, we have a feeling that we are in the midst of a creeping inflation. We believe that top government people are more concerned about this continued uptrend than shows on the surface. Barney Baruch recently sounded off in the papers on this very subject. The upmove has got to end some time. It cannot go on forever. Neither can the upward spiral in wages in steel, trucking, soap or what not continue indefinitely. Maybe

we're all living in a fool's paradise. And this everlasting rise in costs makes one wonder where we are headed.

* * * * *


 **UNREAD LABELS . . .** Consumers of chemical specialties who don't read labels drive manufacturers to despair. Good products incorrectly applied invariably give poor results. The consumer blames the product and the manufacturer retorts that the user didn't read the label directions.

Who's right? Neither and both. The manufacturer whose products have been used incorrectly says "Let's educate them to read labels," and herein lies the core of the dispute. The consumer wants everything made as simple as possible. Product labels covered with many lines of small type and without illustrations are simply not read, and probably never will be. In other cases the illustrations do not show clearly how the product is to be used.

Trying out a new aerosol product recently we ran into trouble with the valve. The stuff exploded into big gobs or nary a drop came out when the valve was pressed. Later the manufacturer confided to us that the valve should have been pressed forward rather than down. This information will appear on new labels,—should have appeared on old.

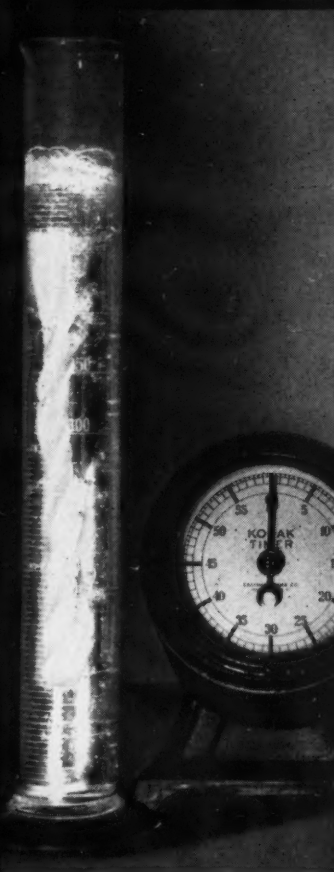
Maybe the fault doesn't lie exclusively with the users. Since the manufacturer has much at stake whether or not the consumer buys his product, it's up to him to see that using it is made simple and effective.

* * * * *

 **POOR ORPHANS . . .** To call attention to the fact that New York City is having a clean-up campaign, they're going to pave one of Manhattan's streets solid with bars of an unnamed pink soap. The idea unquestionably has merit and if it spreads should bring cheers from the soap industry. One angle that bothers us is what happens to the soap after it has served its purpose on the street. There has been talk that it is to be rewrapped and donated to some worthy charity. But to anyone knowing the condition of New York's streets, this seems nothing short of barbarous. Isn't it bad enough to be poor or an orphan?



Cotton skein attached to weight sinks into 0.125% solution of anionic Santomerse No. 1.



Timer starts, skein fully immersed is not yet wet. Contrast loose shape with next photo.



12.5 seconds: skein wet; typical Draves-Clarkson wetting for 0.125% Santomerse No. 1.

Santomerse Proves How Fast It Wets

Monsanto's widely used, all-purpose anionic Santomerse emulsifies, penetrates, cleans—in hard or soft, hot or cold water—in acid or alkaline solutions.

It will pay you to test Santomerse No. 1.

Check its foam stability in water with fats and oils. See how it helps dish rinsing, eliminates toweling. Try it in a home-laundry or general-household cleanser where you want maximum detergency, high foaming and fast rinsing.

Put Santomerse No. 1 with phosphates and alkalis, and watch it clean rugs. Test its stability with calcium salts in a dairy cleaner. As part of a strong acid or alkali metal cleaner, it will fight grease and oil.

Santomerse No. 1 does an outstanding job in hard water. And note as you handle it, the light color, low dusting and flake strength.

Monsanto makes a full line of wetting agents and builder phosphates. One-source buying brings you impartial advice, fast service, simple ordering and money-saving mixed truckloads.

Call your local Monsanto representative. Or write: MONSANTO CHEMICAL COMPANY, Inorganic Chemicals Division, 710 North Twelfth Boulevard, St. Louis, 1, Missouri.

Santomerse: Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS - PLASTICS

Serving Industry... Which Serves Mankind

as the reader sees it...

Soapmaker for 40 Years

Editor:

A little more than 27 years ago I talked with you about a position as a soapmaker. At that time you told me that Lever Brothers Co. might be interested in hiring a man with my experience, and you advised me to write to Mr. A. B. Stewart. I had an immediate reply and after a personal interview I was hired as a foreman to start work April 1, 1929.

The Hammond, Ind., plant was being built at this time, and when it was nearing completion I was asked to transfer out there as superintendent of soap making in May 1930.

In 1950, the Los Angeles plant was being built and after 20 years in Hammond, I was asked to transfer out here as process superintendent in charge of oil handling, soapmaking and glycerine manufacturing.

As of Sept. 1, I was retired, having reached the age limit with Lever Brothers Co. This completes 40 years in the soap business, since I started my career with Procter & Gamble at Port Ivory in 1916.

All of this is written to tell you my progress with Lever and to thank you for thinking I might be the man they wanted, a little more than 27 years ago.

FRED P. BROWN
155 Naomi Ave.
Arcadia, Calif.

"Thanks"

Editor:

I am deeply grateful to you for publishing the obituary of my husband, Henry R. Schmidt, in the July 1956 issue of *Soap and Chemical Specialties*, a copy of which has been received. It is most pleasing to note the amount of space that you were able to give this. Your kindness is appreciated more than I can tell you.

Your magazine has always been of great interest to Henry and me and I find the July issue full of informative articles and news. The article "Benjamin Franklin—Soap Maker" was stimulating, but no more so than the Editor's page (25) telling of liquid detergents and sterile soap. I liked the "ads" too.

Thanks for everything.

ELINOR SCHMIDT
4620 N. Clarendon Ave.
Chicago 40, Ill.

What, No Papers!

Editor:

I have been meaning to write you about programs and meetings ever since your interesting editorial on "Self-Seekers" appeared in the April 1956 issue of *Soap and Chemical Specialties*. It seems like a subject that some of us get concerned about but never do anything about it.

Carl Pacifico and H.E.B. of Chicago took enough time to write you their opinions which you published in the May 1956 issue. They both had very excellent suggestions. Carl suggested experimenting with a few meetings without papers. H.E.B. said, "A concrete suggestion

for improving the quality of the papers is to arrange for speakers far in advance."

There seem to be two problems: (1) too many meetings, and (2) too many papers. Perhaps most members of various organizations do not feel these are problems since they are not on program or arrangement committees. It would be interesting to learn what the members of the C.S.M.A., for example, think are the solutions to these problems.

I would like to see Pacifico's and H.E.B.'s ideas on paper combined and tried by the C.S.M.A. We could still hold two meetings a year, but not have any papers given at the mid-year sessions. This would give the program committees more opportunity to get good papers for the December meeting. Perhaps the Board of Governors have already given consideration to ideas of this nature. If they have not, I would like to urge that further thought be given to improving the papers given at our meetings.

E. J. CAMPAU
Research Department
Standard Oil Co.
Whiting, Ind.

Although the "no papers" meeting has a lot of appeal, companies paying the bills for their representatives at the meeting might take a slightly different view. Some companies now have vacation plans for their employees.—Ed.

Welcome aboard

Dr. and Mrs. E. G. Thomssen are greeted by Captain Hugh L. Switzer of the *S. S. Independence* at a cocktail party given by Capt. Switzer en route from Europe to the United States. The Thomssens spent most of July and August in Europe before returning to their home in Hendersonville, N. C.





Planning

to market a dry bleach for the home?

Here's how HALANE can make your product the best . . .

Halane is safe!

Halane is so safe that you can add it *concentrated*, directly to clothes in the washwheel and it will not damage the fabrics. Halane is safe on cotton, nylon, rayon and acetate. Halane bleaching powders can be safely packaged in either glass containers or cardboard boxes.

Halane makes whites whiter through "controlled bleaching"!

The bleaching ingredient (active hypochlorous acid) is released from Halane at a controlled rate, depending on individual bleaching conditions. That's why badly stained or grayed fabrics come out whiter after a Halane bleach.

Clothes bleached with Halane will wear longer!

In an actual 20-cycle laundry test, clothes bleached with Halane showed only a 2% loss in tensile strength, compared to a 10% loss suffered through ordinary hypochlorite bleaching operations.

Halane is available at new low prices!

Halane is the most widely used organic, chlorine-bearing base for dry bleaches in the home-laundry field. As a result of this sales volume, and greater production economies, Halane is now available at a low, low price.

Halane bleaches in soak, wash or rinse cycles!

Halane is compatible with either synthetic detergents or soaps, and will not form curds when added in the wash or rinse cycles.

Our skilled chemists and engineers . . . modern research laboratories . . . and 65 years' experience as a leading producer of chemicals are at your service. Send for the new Halane data sheet . . . it will help you plan a formulation for the home-laundry market. Wyandotte Chemicals Corporation, Dept. SCS-10, Wyandotte, Michigan. Offices in principal cities.

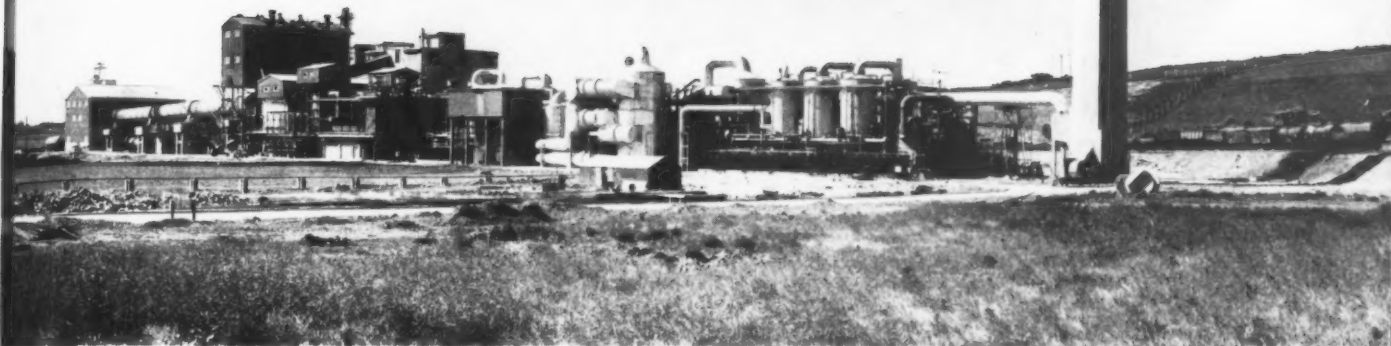
WYANDOTTE CHEMICALS

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SOAP and CHEMICAL SPECIALTIES

"From mine to kitchen sink"



Marchon/Solway's anhydrite sulfuric acid plant. Crushing plant and rotary kilns are on left; converter and contact plants on right.

the story behind Marchon Products, Ltd., England's

Complete Detergent Operation

"FROM mine to kitchen sink" could be the motto of Marchon Products Limited and its wholly owned subsidiary, Solway Chemicals Ltd., both of Whitehaven, Cumberland, England. The parent company ships annually 25,000 to 35,000 tons of household detergents in retail containers ready for use and 10,000 tons of detergent concentrates for the formulation of shampoos, dentifrices, and other

By Charlotte Haas

specialty products. On an adjacent 80-acre site, Solway makes sulfuric acid at the rate of 100,000 tons a year. Better than half the sulfuric is used by Marchon for the manufacture of phosphoric acid and for sulfonation processes. Solway makes its sulfuric acid from anhydrite (calcium sulfate) mined from a major deposit of this ore on which Marchon happens to have built its plant. Other raw materials for the manufacture of sulfuric from anhydrite are shale, which Solway mines from a hill on the site and coke which, believe it or not, is brought in by rail and road.

For each 100,000 tons of sulfuric acid, this process produces an equal amount of cement as co-product which is manufactured in a form ready for sale and bagged. Disposal and sale are in the hands of Associated Portland Cement Manufacturers Limited. Proceeds make sulfuric from anhydrite, only domestically available raw material,

competitive with acid from sulfur, pyrites or other ores which have to be imported from the United States or southern Europe.

The Solway site houses two different mining operations, a complete cement plant, and the sulfuric acid and oleum plant, *raison d'être* of the whole operation. Sulfuric acid and oleum are stored in a battery of thousand ton tanks from which the material can be fed to road or rail tankers. A pipe line

Frank Schon,
Chairman



M. Dulayo,
Export sales manager





Mining anhydrite ore from seam beneath Marchon/Solway plant.

connects the Solway storage tanks with the adjacent Marchon works where the acid is used to make phosphoric acid and where oleum and concentrated sulfuric acid go into the manufacture of primary fatty alcohol sulfates, alkyl aryl sulfonates and other surfactants.

What Marchon Makes

IN THE Marchon phosphoric plant, phosphate rock imported from French North Africa via Whitehaven Harbor, is digested with sulfuric acid to form 40 percent phosphoric acid. This in turn serves as starting material for the production of complex alkali phosphates of which Marchon produces between 20,000 and 25,000 tons a year, to be doubled next year.

Fatty alcohols are made by high pressure hydrogenation in the presence of a copper chromite catalyst and by distillation in a "Dowtherm" heated fractionating column under high vacuum. Marchon's plant is adaptable to the use of vegetable oils, tallow, fatty acids, or fatty acid esters as starting materials.

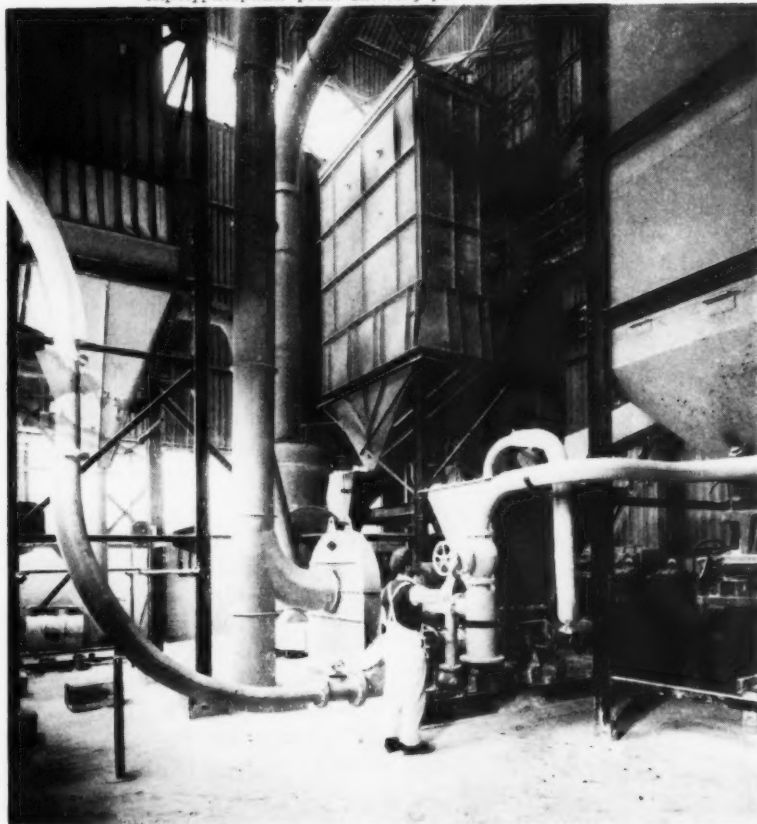
Marchon makes a range of ethylene oxide condensation products under the trade name "Empilans." These include a number of fatty acid alkylolamides for use as foam boosters and stabilizers in shampoos and detergent powders

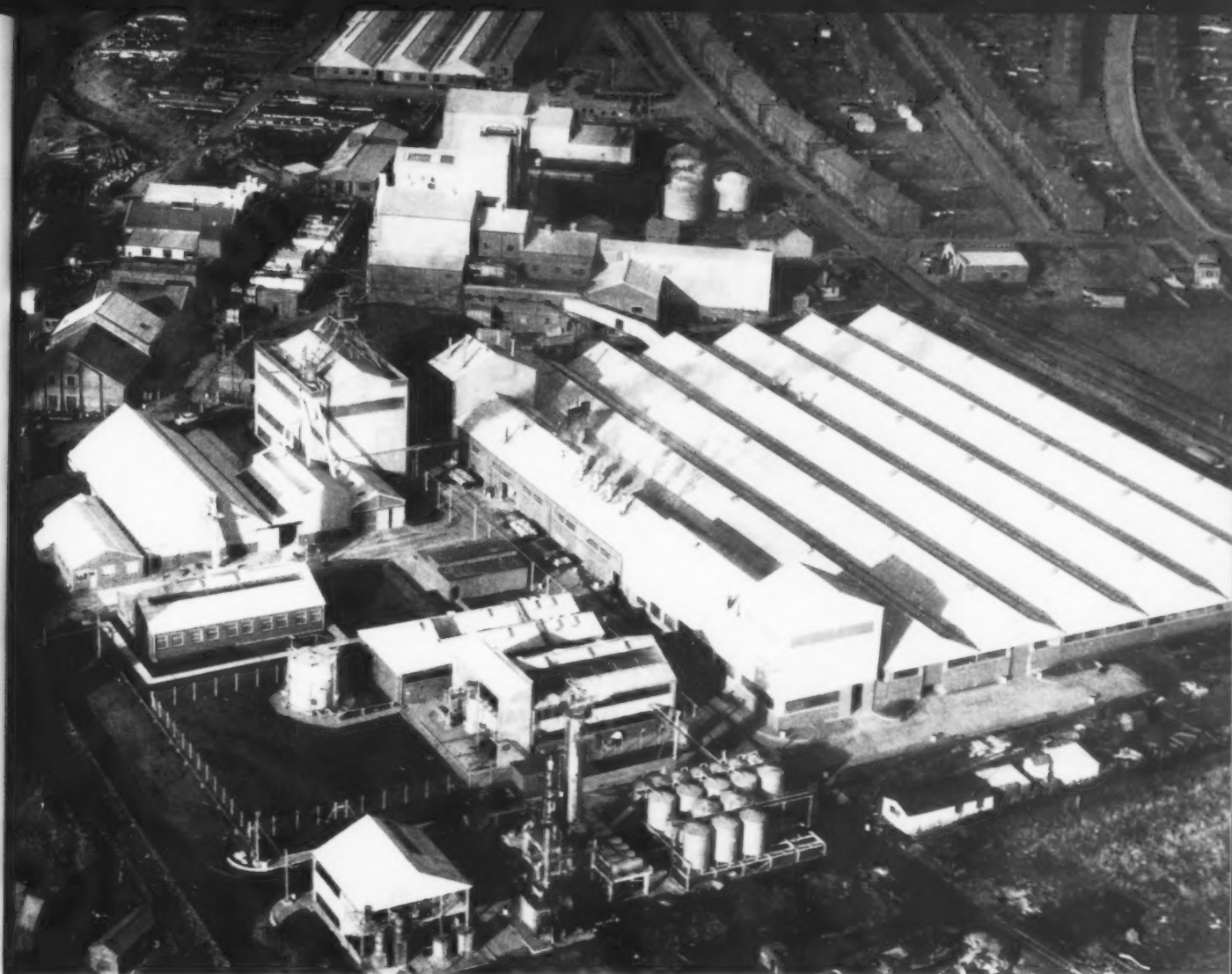
and liquids. Other "Empilans" are edible emulsifiers, special textile oils, and other industrial auxiliary products.

However, the most important part of Marchon's production capacity is engaged in making surface active agents and detergents.

A considerable proportion are spray dried built and unbuilt synthetic detergents, which are shipped by the firm in their retail package, custom labelled under some of the most popular brands. They go to western Europe, to South America, and to various other parts of the world. An 80 percent active dodecyl benzene sodium sulfonate flake, 40 percent active alkyl aryl sodium sulfonate powder, and concentrated liquid synthetic detergents are shipped to syndet manufacturers and formulators. The liquids include products based on primary fatty alcohol sulfates and on alkyl aryl sulfonates. Shampoos in Western Europe, we understand, are almost exclusively based on fatty alcohol sulfates. In Britain, this material is largely supplied by Marchon. Surprisingly enough, household detergents are almost exclusively formulated from hydrocarbon derivatives as opposed to the United States where some of the popular brands are mixtures of vegetable oil and hydrocarbon derivatives.

Tripolyphosphate plant showing powder flow discharge.





A visitor to Whitehaven actually sees the anhydrite being mined and the finished packaged detergents being readied for shipment. The set up gains in interest with the realization that this chain of manufacturing processes was prompted by a detergent maker's raw materials requirement. The vertical development of Marchon/Solway is not that of a basic chemicals manufacturer invading the consumer market and competing with his own actual and potential customers. Here is a specialties manufacturer who decided to make his own starting materials. Marchon/Solway makes for sale and captive use the following products: cement, phosphoric acid, ortho and complex phosphates, oleum and sulfuric acid, household and industrial detergents, cosmetic, toiletries

General aerial view of Marchon plant in Whitehaven, England, where detergents from raw material to finished product are processed.

raw materials (anionics), fatty alcohols, emulsifiers and nonionic syndets. To do so, it imports phosphate rock from North Africa in two ships under charter. Another vessel expressly built for the purpose is currently under construction. The firm buys coal and coke from nearby producers. Alkalies are purchased from one of the largest British suppliers, who, we are told, sell them at low prices in spite of holding a virtual monopoly in this field. (Oh, shades of Sherman and Clayton). Hydrocarbons for the detergent maker are made by Shell, Monsanto, and Grange Chemicals. Ethylene oxide employed at the plant is produced by Petrochemicals, Ltd. (a Shell subsidiary), Esso

British Petroleum, and Imperial Chemical Industries, whose production is almost entirely for captive use.

Shipping and Packaging

MARCHON exports approximately 50 percent of its products. Most of these are dispatched by ship directly from Whitehaven harbor. Of the remainder, the vast majority is shipped by tank truck and trailer. For the past seven years, Marchon has packaged many of its bulk products in drums with plastic liners made from heavy gauge laminated polyvinylchloride sheeting, which, we understand, is reusable and more suitable for this purpose than polyethylene. Cost of such liners runs considerably below that of enamel coated drums. Products

(Turn to Page 50)

Detergents AOCS Meeting Topic

By H. H. Slawson

AN all-day symposium on synthetic detergents highlighted the 30th annual fall meeting of the American Oil Chemists' Society, held at the Hotel Sherman, Chicago, Sept. 24 to 26. Of particular interest to detergent producers and marketers was a report on the use of detergents as soil additives in agriculture. The report dealt with the current status of research on this most recent detergent application. Of almost equal interest was another paper on sugar esters as a new source of detergent raw materials.

Also emphasized at the meeting was the growing importance of Chicago as a processing center for inedible and edible fats and oils of both vegetable and animal origin. Except for cottonseed oil, Chicago and its environs comprise the leading center of industrial animal fat and vegetable oil production, with the meat packers playing a major role, it was brought out in a statement released during the 30th annual AOCS fall meeting. About 25 percent of the American soybean crop is grown in Illinois and 40 percent of all soybean oil is produced in that state. Adding to Chicago's importance in this field is the fact, too, that one of the largest designers of oil processing plants and equipment operates an important branch in Chicago.

While conceding that the subject of detergents as soil additives is still controversial, James E. Seymour of the research laboratory of Illinois Farm Supply Co., Collinsville, Ill., declared that if certain questions are resolved, this new use of detergents "could feasibly be translated into handsome profits."

Mr. Seymour reviewed the

results of previous research by Atlantic Refining Co., Philadelphia, the U. S. Department of Agriculture and state experiment stations. He told how Illinois Farm Supply Co., a cooperative buying agency owned by Illinois farmers, has initiated an investigation of detergents as soil additives. This followed the development of a method for using surfactants to facilitate processing and reduction of caking of chemical fertilizers.

Research results from the work which he directed, Mr. Seymour said, "indicate that surfactant application to certain Illinois soils can accelerate the moisture infiltration rate by 300 percent. Our results, too, indicate that the treatment of certain Illinois soils with very small quantities of specific surfactants can significantly increase the water-holding capacity of the soil. The soil tilth on our experimental plots appeared to be improved in many instances. We also find indications that surfactant applications possibly result in increased emergence rate and increased plant survival."

Examination of other experimental work has raised many questions, eight of which Mr. Seymour listed and discussed.

"It appears logical to conclude," he summed up, "that the primary responsibility for future research and development of this use of surfactants largely rests with the members of the American Oil Chemists Society. The revelation of the mechanisms of the functions of surfactants with specific soils and crops could feasibly be translated into handsome profits. The potential is there. It is a challenge to you gentlemen."

Sugar Based Detergents

AUGMENTING Mr. Seymour's vision of increased demand for surfactants for agricultural use was a paper on "Sugar Esters" as a low-cost source of raw materials for production of non-ionic surfactants. Authors of this report were Foster Dee Snell and Lloyd Osipow of Foster D. Snell, Inc., New York chemical and engineering consultants.

Sucrose, glucose and invert sugar, they pointed out, are "the lowest-cost materials for use as the hydrophilic moiety of non-ionic surfactants," with sucrose providing sufficient polarity for water solubility.

The sugar esters, they stated, are a source of water-soluble fat. At present they are not in commercial production but, because of their potential application in medicine, food and agriculture, they possess "extraordinary" interest. Since first announced, substantial improvements have been made in methods of manufacture of sugar esters and the present process, it was explained, results in an almost instantaneous conversion of methyl ester to sugar ester. Purification can be carried out as a continuous operation and the sugar esters are recovered as an aqueous slurry from which they can be spray-dried.

Detergents Symposium

THE detergent symposium was opened with an historical review of "milestones" in their development, presented by W. M. Bright, of the Edgewater, N. J., research laboratory of Lever Brothers Co., New York. He touched briefly on early use of the first detergent soaps in the textile industry, and German

developments under stimulus of war shortages.

It remained, he said, for the U. S. chemical industry rapidly to develop, select, formulate and market compounds most suitable and efficient for household use, such as light duty dishwashing and fine fabric washing.

About 1946, Mr. Bright went on, it was found that the molecularly dehydrated polyphosphates improved performance of many anionic detergents. At the same time, the oil industry's synthesis of polypropylene benzene sulfate made available a low cost organic active. These two developments, he said, permitted formulation of a reasonably priced domestic granulated detergent for heavy duty cotton washing.

"From then on," he said, "sales of synthetics rapidly increased until, by 1953, as large a tonnage of synthetics as soap was sold and the end is not yet."

While anionic detergents have held the stage, tonnage-wise, the number of non-ionics available has increased enormously, he pointed out. In the household field, in particular they are useful in automatic machine washing and in light duty detergent formulations marketed in liquid form. Commenting on the appearance of heavy duty liquid detergents and synthetic toilet bars, he declared: "And the next step in lessening of soap usage may be in front of us."

In a paper on "Non-Ionic Surfactants" C. E. Stevens, Antara Chemicals, a sales division of General Aniline & Film Corp., New York, limited his discussion to nonionics prepared by reaction of ethylene oxide with a hydrophobic molecule containing an active hydrogen. Ethylene oxide-solubilized surfactants, he said, are

unusual because each hydrophobic base is a potential source of a homologous series of surfactants which differ in hydrophobic-hydrophilic balance. This, he said, makes it possible to synthesize compounds with the optimum hydrophobic-hydrophilic ratio for each important use. He described chemical structures of many non-ionic surfactants, related these to important uses and estimated growth potentials. Non-ionic surfactants, he also pointed out, are frequently used as intermediates for synthesis of anionic surfactants.

D. L. Andrews, General Mills, Inc., Minneapolis, Minn., in his discussion of "Ampholytic Surface-Active Agents," said recent advances in detergent technology and research have uncovered areas where this type of product offers distinct advantages over anionic, cationic and non-ionic detergents. Continuing, he discussed the physical and performance characteristics of typical ampholytic surfactants which illustrated these areas of interest.

Organic detergent test methods using ultra-violet absorption procedures for determining alkyl aryl sulfonates and a non-aqueous titration of acid mixes were described by W. G. Spangler, Colgate-Palmolive Co., Jersey City, N. J. Following him, J. C. Harris, application research department, Monsanto Chemical Co., Dayton, O., reviewed analytical test methods for the inorganic portion of detergent products. This phase of the analysis, he said, has a relatively satisfactory status, although some of the schemes are incomplete with respect to a good analysis of sodium tripolyphosphates. Improved analysis techniques are also needed, he asserted for optical brighteners, corrosion

inhibitors, tarnish inhibitors and carboxy-methyl cellulose, since they do not exist in satisfactory form.

A survey of surfactants made by Carl Pacifico and M. E. Ionescu of American Alcolac Corp., Baltimore, Md., indicates that, while household applications still use the largest volume, their proportion of the total is steadily decreasing and volume of products used for applications other than cleaning is rapidly increasing.

Their joint paper, it was claimed, made publicly available for the first time a detailed analysis of the volume of surfactants used in each major application. Where possible, also, they gave details of the important properties required for success in each use.

The technical feasibility of increasing the efficiency of oil-field flooding through addition of surfactants to flood waters is generally recognized, C. E. Johnson, Jr. of California Research Corp., San Francisco, pointed out in a paper evaluating this procedure. He added, however, that the economic feasibility of such a process has not been demonstrated and the problem of economic feasibility has never been formulated in anything approximating precise terms.

It depends, he said, on at least eight separate variables, for the evaluation of which he offered a theory that would yield a method for predicting the prospects for economic use of any particular surfactant in oil field flooding.

Other papers presented at the detergent symposium included the following: "Review of Alkyl Aryl Sulfonates," by E. L. Miller and P. E. Geiser, Continental Oil Co., Houston, Tex.; a discussion of "Fatty Acid Sulfates," by D. B. Hatcher, Stepan Chemical Co., Chicago; and a review of "Alkylolamides" by Jerome Kritchewsky, Ninol Laboratories, Chicago.

Foam Stability

A MONG the 67 papers presented during the three-day Chicago meeting of the A.O.C.S. was one
(Turn to Page 191)

New developments in detergents, including their use as soil additives, discussed at 30th annual fall meeting of the American Oil Chemists' Society held last month in Chicago.



Du Pont photograph
Cleaning sea water evaporators is easy with sulfamic acid based cleaners. These cleaners are inhibited to minimize corrosion.

AN acid which was first prepared in a chemist's laboratory more than 100 years ago has been blossoming forth in the sanitary chemical field in the past 10 years as one of the newest and most promising developments among commercial and household cleaning compounds.

Known chemically as sulfamic acid (HSO_3NH_2), it remained a laboratory curiosity until 1940, when Du Pont developed the first practical method of manufacture. During postwar years, its unique physical and chemical properties have led to rapid and steady commercial acceptance in many industrial cleaning jobs. Today, these same properties give it promise for a whole new range of formulated acid cleaners which can accomplish difficult household and industrial cleaning chores easily. Such cleaners should be readily accepted in the consumer market.

Sulfamic acid is a white non-hygroscopic, non-volatile, solid inorganic acid, available in either crystalline or granular form. This solid acid is moderately soluble in

water and forms highly ionized solutions which approach the strength of sulfuric, muriatic, or nitric acids. Yet solutions of sulfamic acid are much less corrosive to all metals than these mineral acids, and are easily inhibited to prevent attack of the metal being cleaned.

And herein lies the secret of the ability to do an extraordinary cleaning job with a minimum of effort on the part of the user. Alkaline cleaners depend on abrasive components and elbow grease to remove soil deposits caused by metal salt stains, oxide films, or hard-water scale deposits. But these troublesome forms of soil are efficiently removed by the *chemical* action of sulfamic acid cleaners with a minimum of manual scrubbing.

Sulfamate salts, in most cases, are more soluble than a corresponding nitrate, chloride, or sulfate salt, making sulfamic acid a preferred material for scale removal. Crystal and granular forms of sulfamic acid are free-flowing, even when compounded, and are com-

patible with dyestuffs, inhibitors, and wetting agents. Under normal storage conditions sulfamic acid has outstanding chemical stability.

Low Metal Attack Rate

THE low rate at which sulfamic acid attacks metals, as compared with mineral acids, has helped to win friends for it in many cleaning applications. Hydrochloric acid, for instance, attacks metal from three to seven times faster than a corresponding sulfamic acid solution. In addition, sulfamic acid solutions, as mentioned previously, respond well to the addition of acid inhibitors, enabling the metal attack rate to be reduced below all critical limits for practical cleaning formulations.

Pitting and stress-cracking, chief objections to the use of hydrochloric acid (muriatic) in cleaning stainless steel equipment, are eliminated entirely through the use of sulfamic acid with this metal. Small wonder then, that sulfamic acid is becoming a favorite for big industrial cleaning jobs where stainless steel is involved.

Sulfamic Acid

A century old chemical is now finding increasing use as a basic ingredient for a wide range of new and standard household and industrial type cleaners.

Sulfamic acid's dry form gives it another advantage over other mineral acids—the convenience of a dry powder. Sulfamic-based compounds can be shipped in lightweight disposable packages. There is no glass to break and no danger of acid burn through liquid spillage. Its form makes it suitable for cleaning things ranging from industrial equipment to the housewife's copper-bottom pans.

Industrial Applications

HERE are a few of the interesting industrial cleaning applications for which sulfamic acid has been accepted:

Marine Field: Rigid safety requirements and critically limited use conditions in the maritime industry provide a prime example of an industrial application where sulfamic acid has filled a need. In marine cleaning, formulated dry solid sulfamic acid mixtures are being used for descaling evaporators and "Butterworth" heaters on board all types of ocean-going ships.

The fact that solutions of sulfamic acid are non-volatile and do not give off objectionable fumes (as in the case of muriatic acid) makes it an outstanding product for use aboard ship. Safety to personnel and convenience of handling give it a preferred position.

Sulfamic acid's outstanding solubilizing power for magnesium and calcium scale deposit makes it ideal for cleaning scale buildup from heat exchange equipment on shipboard, as in any other location where water-deposited scale buildup occurs.

Sugar Refining: A number of sugar refineries have found the high-solubilizing power of sulfamic acid for calcium salts the key to optimum concentrating evaporator operation. Scale buildup on these evaporators reduces efficiency. It is necessary to use a cleaner that is safe to equipment and effective for removing scale from the heat exchange surfaces. Sulfamic acid fills the bill again in this case, being highly effective with no danger to equipment or personnel.

Food Processing: Sulfamic acid has proved most effective for cleaning evaporators, cooking kettles, mixing kettles, and other stainless steel food processing equipment. Stainless steel equipment is expensive and, here particularly, use of hydrochloric acid runs the risk of "pitting" or "stress-cracking" by the chloride ion.

Dairy Industry: The dairy industry has a great need for cleaners to remove milk-stone. Sulfamic acid-based formulations are being extensively used and becoming more popular for cleaning of glass-

lined, and stainless steel equipment. Ease of handling, safety to personnel, low-metal corrosion, and high-solubilizing power for calcium salts, are all factors that have resulted in increased demand for dairy cleaners based on sulfamic acid.

Brewing: Until several years ago, no completely satisfactory cleaning formulations were available to the brewing industry for use on brewery process equipment where it was necessary to maintain a high degree of sanitation and operating efficiency. Formulations based on sulfamic acid are now being used with outstanding success to remove "beer-stone" from vats and other equipment.

Air Conditioning: During the past two years, a large market for compounded scale removers has developed in the fields of water-cooled air-conditioning equipment, evaporative condensers, and ice-making machines. Scale buildup reduces the efficiency of such equipment and increases the cost of cooling. Periodic removal of the scale serves to maintain peak operating efficiency. Sulfamic acid-based scale removers are outstanding for this use. They are both safe and simple for servicemen to use in cleaning the equipment, and safe for the equipment, too.

Household Products

THE properties of sulfamic acid which make it so effective in industrial uses also make this acid a preferred base for formulating chemical cleaning agents designed to remove alkali-resistant types of soil around the home. The fact that sulfamic acid is available in a free-flowing crystal or granular form enables formulators to compound cleaners easily and market them in attractive packages, ready for household use. Sulfamic acid's high degree of chemical activity permits formulation of products that will do a quick, efficient, chemical cleaning job with a minimum of work for the housewife. One of the big advantages of these cleaners is the complete absence of fumes, so objectionable when mineral acid

Using sulfamic acid as a cleansing acid, as shown below, a Wisconsin paper maker is reported to be saving approximately \$15,000 a year.

Du Pont Photograph



cleaners are used. High solubility of sulfamate salts allows formulation of products that require a minimum of directions on the label. This, in turn, insures a high degree of satisfaction through successful use of the product.

This consumer market currently has need for many new and improved products to serve as metal cleaners, stain removers, hard-water scale removers, ceramic cleaners, etc. Only a few such products, based on sulfamic acid, are currently marketed at retail level. The following are some of the consumer cleaner types into which this chemical fits ideally.

Metal Cleaners: Aluminum, stainless steel, copper and copper-based alloys are readily cleaned by compounded cleaners based on sulfamic acid. It can be formulated in combination with sodium chloride, oxalic acid, tartaric acid, citric acid, and poly-phosphates in order to produce a consumer product best designed for the specific application. These formulations of sulfamic acid have excellent shelf stability, are relatively non-caking, and adaptable to high speed packaging.

The physical form of metal cleaning compounds can be tailored to meet specific requirements. Either paste or dry, fine crystalline formulations can be produced. It is also possible to use a wide variety of inert fillers, ranging from

starches to diatomaceous earth and clays. Effervescence can be incorporated in formulations by simply adding a small quantity of sodium carbonate, bicarbonate, or nitrite to the dry formulation. A wide range of dyestuffs can be added for coloring cleaners for eye appeal. Commercially available wetting agents are compatible over a wide range. The addition of chemical inhibitors has reduced the corrosion rate to a point where even galvanized ware can be cleaned safely with properly formulated sulfamic acid.

Stain Removing Compound: Sulfamic acid's solubilizing action on metal salts makes it an excellent candidate for use in rust and stain remover formulations. Complexing or sequestering agents are added for efficient high speed cleaning. These formulated products are particularly effective for removing metallic stains from cement, tile, and other ceramic and porcelain enameled surfaces.

Hard-Water Scale Removers: Sulfamic acid is particularly adaptable for compounding into products that can be used safely for a wide range of scale removing needs found in the household. Cleaning of such items as cooking utensils, steam irons, humidity control equipment, and a host of other appliances using the water evaporation principle may be accomplished safely with this type of compound.

A potential market of considerable size would seem to exist for the first manufacturer to develop and offer such a product for household use.

Other Possible Formulations: Although most of the use applications for acid cleaners fall under the heading of either metal cleaners, stain removers, or hard-water scale removers, there are many other fields worth investigating. Sulfamic acid-based products could replace bottled hydrochloric acid for removing cement from new brickwork and patio stones. Silverware cleaners, bowl cleaners, asbestos shingle cleaners, denture cleaners, and a host of other similar products constitute a tremendous potential market awaiting some ingenious formulation.

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Victor Scholarship Contest

Victor Chemical Works, Chicago, announced late last month plans for four, \$4,000, four-year science or engineering scholarships to be awarded to 1957 high school graduates. Winners will be selected by means of an elimination contest sponsored by Victor.

Victor's competition calls for the submitting of plans, in not over 500 words, for "The kind of program you think industry should adopt to stimulate the interest of high school graduates in becoming scientists and engineers." From the entries, 20 suggested programs will be selected and each of the winning authors will have the right to nominate a 1957 high school graduate of his or her choice. Of the nominees, four will be selected by a committee to be appointed by the American Chemical Society.

The contest is open to all except students, Victor employees, their families, or members of their advertising agency. All entries must be postmarked by Nov. 30 and received not later than Dec. 14 by Victor Talent Scout Contest, P. O. Box 5767, Chicago 77, Ill. Entries must be typed and accompanied by an entry blank which is available upon request from Victor, 155 N. Wacker Drive, Chicago 6, Ill.

Granular form of sulfamic acid is easier to handle, users report, because it flows readily.



Coconut Oil Substitutes

Indigenous oils of Pakistan are studied as replacements for coconut oil in the manufacture of various kinds of soaps.

By Dr. Sultan Ahmad Tramazi,

Assistant oil technologist,
Agricultural College and Research Institute,
Lyallpur, West Pakistan

and

M. Anwar Ali Bhatti,

Technological assistant,
Oilseeds section,
Lyallpur

HOW far can the quantity of coconut oil in toilet soaps be cut and replaced with other vegetable oils without materially affecting the copious lathering and other detergent qualities of straight coconut oil products?

The answer to this question, of tremendous economic significance to soap making in Pakistan, has been determined by a series of experiments using vegetable oils indigenous to that country.

In order to foster the growth of a vegetable oil industry where none had existed previously, Pakistan sponsored the development of cottage "industries" which would consume the oils. Toilet soap making was to rank as one of the most important of such "industries."

However, not only is Pakistan short of oils and oilseeds, but it must import coconut oil for soap making. The additional cost of imported coconut oil eliminates all possibility of domestically produced soaps competing with foreign made ones. Ironically, supplies of coconut oil are abundant in adjacent India, which surrounds and separates Pakistan from West Pakistan. Coconut oil is available along the Malabar and Coromandel coasts and in the lower basins of the Ganges. The shortage of oils and oil seeds in Pakistan has checked what was hoped would be the rapid development of the toilet soap industry.

Several modern soap factories supplied the needs of the area known as India prior to the partition. All these plants are located in regions which came within the territory of the new India, when

the subcontinent was partitioned. They include the Godrej soap factory in Bombay, Tata Oil Mills Co., Bombay, Bengal Chemical Works in Calcutta, and the Mysore Government soap factory, all of which can produce high grade toilet soaps comparable to foreign products (Bhal, 1938). Thus, partition left Pakistan in a position where it had to depend entirely on imports for its soap needs.

According to Turner (1949), West Pakistan might become self-sufficient in its requirements for edible oils and fats within 15 years if the acreage for oilseeds is increased at the compound rate of 10 percent annually. To encourage development of oils and fats production and soap making in Pakistan a number of experiments were carried out.

Experiments

THE experiments were conducted at the Oil Technological Laboratory, Oilseeds Section, Agricultural Institute, Lyallpur, West Pakistan. The soaps were prepared by the cold process. As already stated, the idea underlying these experiments was to determine the minimum quantity of coconut oil that could be used during the manufacture of toilet soap without im-

pairing its lathering and detergent properties. Sarin (1932) has given some good recipes for making soap by the cold process using coconut oil in combination with tallow and rosin. He did not attempt it in combination with indigenous oils. Similar attempts were also made by an "industrialist" (1946). In the experiments reported herein soaps similar to such well known trade name products as "Lux," "Godrej," "Carbolic," "Sunlight," and "Palmolive" were prepared in small quantities. Coconut oil was used in different combinations with sesame seed oil, peanut oil, castor oil, cottonseed oil and brown sarsaparilla oil. The experiment was divided into two sets, in one of which 50 percent or more of the oils used was coconut; in set two, less than 50 percent of the total oils used was coconut.

No. I

I. "Lux" type

coconut oil	5 parts
peanut oil	1 part
zinc oxide	2 percent
perfume, "Narcissus"	2 percent
lye 38° Baume, 50 percent of weight of total oil used	

II. "Godrej" type

coconut oil	6 parts
sesame oil	5 parts
castor oil	1 part
perfume, chypre	2 percent
color	green or orange
lye 36½° Baume, 50 percent of weight of total oil used	

III. "Carbolic" type
coconut oil 6 parts
cottonseed oil 5 parts
castor oil 1 part
color red
carbolic acid 2.5 percent
lye 36½° Baume, 50 percent of weight of total oil used

IV. "Sunlight" type
coconut oil 6 parts
cottonseed oil 5 parts
castor oil 1 part
color Uranine yellow
citronella 2 percent
lye 36½° Baume, 50 percent of weight of total oil used

V. "Palmolive" type
coconut oil 6 parts
peanut oil 5 parts
castor oil 1 part
color green or orange
Oliveen 2 percent
lye 36½° Baume, 50 percent of weight of total oil used

All of these soaps lathered freely. Their texture was also good.

No. II

IN set two, the proportion of coconut oil was reduced to 30 percent and 25 percent of the total amount of various other vegetable oils used in different mixtures. Some soaps were also made without any addition of coconut oil. The following combinations were tried.

I.
coconut oil 2 parts
peanut oil 3 parts
castor oil 1 part
Oliveen 2 percent
color green
lye 36½° Baume, 50 percent of weight of total oil used

The soap was quite good in texture but did not lather as well as when a higher percentage of coconut oil was used.

II.
coconut oil 3 parts
peanut oil 8 parts
castor oil 1 part
color green
"Ixor" 2 percent
lye 36½° Baume, 50 percent of weight of total oil used

This soap was quite good in texture, but the lathering properties were below normal. Soap No. II. proved to be a bit softer than No. I. due to the presence of a higher amount of peanut oil.

III.
brown sarson oil 2 parts
sesame oil 3 parts
peanut oil 3 parts
"Muskos" 2 percent
lye 36½° Baume, 50 percent of weight of total oil used

Table I. Percentage of moisture, free fat, free alkali and total fatty acids content in various toilet soap samples (average of two lots) prepared in the laboratory.

S. #	Sample Name	Mois. %	Free Fat %	Total acids	Total fatty acids %
1.	"Lux" type	9.6	1.06	0.58	68.11
2.	"Sunlight" type	14.6	0.96	0.45	68.51
3.	"Lifebuoy" type	13.7	1.40	0.77	69.18
4.	"Godrej" type (Or.)	10.1	1.06	0.44	69.25
5.	"Godrej" type (Gr.)	13.2	0.64	1.42	66.17
6.	"Palmolive" type	12.9	0.88	1.25	65.27

The texture of this soap was not good; hardness was normal, but it did not lather.

IV.
brown sarson oil (refined) 3 parts
sesame oil 5 parts
"Muskos" 2 percent
lye 36½° Baume, 50 percent of weight of total oil used

The texture of this soap was not good. It did not lather and it was also brittle.

V.
sesame oil 3½ parts
peanut oil 3½ parts
castor oil 1 part
lye 36½° Baume, 50 percent of weight of total oil used

The texture of this soap was medium. The soap was soft. It lathered slightly.

It is clear from the above results that of the total quantity of oils required for the manufacture of toilet soaps, 50 percent must be coconut oil for good lathering properties, and the balance may be made up from sesame, peanut and castor oils. Brown sarson oil has been found to be unsuitable for use in the manufacture of soaps of good quality.

In order to test their quality, soaps in the first set which appeared to be of good texture and lather freely were also analyzed for their moisture, free fat, free alkali and total fatty acids percentages. The methods employed for the chemical

analyses were those outlined by the Association of Official Agricultural Chemists, (U.S.A.) 1950. These were also compared with imported soaps available on the market. The results of the analyses are shown in Table I.

The results shown in Table II. indicate that these samples contain only traces of free alkali. The total fatty acids are within limits of toleration and compare very well with a good representative of toilet soap.

The results show that these samples, being milled soaps, contain lesser amounts of moisture and fatty acids than soaps made in the laboratory by the cold process.

Storage Effect on Quality

THE soaps made by the cold process were stored for one year to determine whether any change in the chemical composition has taken place as a result of prolonged storage. The results of the analyses of the stored samples are shown in Table III.

The results shown in Table II indicate that moisture percentage in the stored samples has decreased considerably in each case when compared with fresh samples (Table I). This obviously is due to drying during storage. There is, however, no appreciable change

Table II. Percentages of moisture, free fat, free alkali and total fatty acids content in imported toilet soaps available in Pakistan.

S. #	Name of sample	Moisture %	Free fat %	Free alkali %	Total fatty acid %
1.	"Lux"	5.4	0.88	1.65	83.16
2.	"Sunlight"	8.6	0.80	2.02	80.84
3.	"Carbolic"	12.1	0.72	1.52	78.78
4.	"Palmolive"	4.1	0.72	1.20	83.90
5.	"Pears"	5.2	0.64	2.14	81.86
6.	"Hamam"	5.9	1.04	2.50	78.79

Table III. Percentage of moisture, free fat, free alkali and total fatty acid content in toilet soaps stored for one year.

S. #	Name of sample	Moisture %	Free fat %	Free alkali %	Total fatty acid %
1.	"Lux" type	8.4	1.82	0.54	70.87
2.	"Sunlight" type	10.8	1.58	0.44	71.08
3.	"Lifebuoy" type	9.8	1.91	0.28	72.53
4.	"Godrej" type	8.1	0.74	0.44	65.98
5.	"Palmolive" type	9.1	1.22	0.60	67.78

in the amount of free fat, free alkali and total fatty acids as a result of storage for one year.

Quality of Soaps Available

A. Toilet Soaps

In order to test the quality of the soap produced by private enterprise on commercial as well as semi-commercial scale, samples of different toilet soaps manufactured both by cold as well as milled processes were collected mainly from Lahore and Lyallpur markets. These were analyzed for moisture, free fat, free alkali and total fatty acids percentages. The results obtained are shown in Table IV.

The results show that almost all of the samples produced by the cold process are inferior in quality to the milled soaps. Either they have been found to contain a very high percentage of moisture (up to 23.84 percent) or a very low percentage of fatty acids (23.70 percent). Free fat and free alkali, however, are within limits of tolerance, their amount varying between 0.52 to 2.89 percent and 0.27 to 2.9 percent, respectively. All of the samples of milled soaps, however, are up to standard. Moisture percentages in these have been found to vary between 6.72 and

7.49, while fatty acid content has been found to run between 79.91 and 81.23 percent, which is normal for a high quality toilet soap.

B. Washing Soaps

Twenty samples of washing

Table V. Percentage of moisture, free fat, free alkali and total fatty acid content in samples of washing soaps produced locally.

S. #	Name of sample	Moisture %	Free fat %	Free alkali %	Total fatty acid %
1.	Bijli marka	15.12	1.30	2.00	46.82
2.	Punjab marka	20.41	1.17	6.00	23.84
3.	Dhobi marka	14.61	1.32	1.60	47.26
4.	Nirala soap	16.72	1.48	1.80	44.34
5.	Har marka	16.23	1.72	1.20	48.44
6.	Gream soap	17.63	1.77	2.00	41.16
7.	Iraq soap	11.78	1.77	2.90	21.86
8.	Mushtaq soap factory	20.07	0.83	7.00	17.27
9.	840 (Washid soap factory)	14.92	0.88	3.40	42.04
10.	Saleem soap factory	15.69	0.83	2.46	40.19
11.	Amritsar soap factory	18.43	0.27	1.60	46.17
12.	Nagina soap factory	19.77	1.67	4.80	46.16
13.	Chaudhry soap & Chemicals	16.87	0.62	6.60	38.76
14.	Jamu soap 385	23.27	0.73	9.00	11.56
15.	Sindhu soap factory	23.27	1.45	8.40	21.39
16.	Ilyas soap factory	20.39	0.27	6.80	14.67
17.	Mansoor soap factory	17.79	0.92	1.00	59.00
18.	M. Ramzan soap factory	18.98	2.21	2.56	17.85
19.	Do-ayna soap factory	22.43	0.11	10.41	13.88
20.	Wahid soap factory (Nirel)	23.40	1.70	0.80	64.34

soaps produced by cold as well as the boiled process were likewise collected from Lyallpur and Lahore, mostly from dealers running the business on a cottage industry scale. These were analyzed for moisture, free fat and free alkali and total fatty acids content. The

results appear in Table V.

The results show that the majority of these samples have been adulterated in one form or another by the addition of soap stone, sodium silicate and other cheap fillers. This practice tends to reduce the fatty acids percentage to the lowest possible limit. The basic idea underlying the use of cheap fillers is to reduce the price of the product. The fatty acids percentage has been found to vary between 11.56 and 64.34 percent. The moisture percentage has been found to vary between 11.78 and 23.40. The

amount of free alkali has been found in some samples to be as high as 10.4 percent. This indicated that most of the manufacturers do not possess the requisite amount of basic knowledge and technical experience in the making of soap. No standard methods of soap manufacture are followed, each soap maker is invariably guided by his own experience and initiative with the result that in the majority of cases the product placed on the market is substandard.

Summary

STUDIES on the manufacture of toilet soaps by cold process and trials of different mixtures of various vegetable oils such as

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Table IV. Percentages of moisture, free fat, free alkali and total fatty acids content of toilet soap samples.

S. #	Name of sample	Moisture %	Free fat %	Free alkali %	Total Fatty Acids %
1.	"Behtrin toilet soap (milled) ..	7.49	0.36	0.56	81.01
2.	"Musk" toilet soap (milled) ..	6.72	0.52	0.55	79.91
3.	"Paphyha" toilet soap (milled)	7.31	0.80	1.26	81.23
4.	"Behtrin" soap (Sunlight type)	22.40	0.64	0.62	66.05
5.	"Behtrin" soap (Carbolic type)	22.47	2.00	1.84	66.29
6.	"Bond toilet soap	10.10	1.70	0.27	46.99
7.	"Three Flower" toilet soap	13.81	1.60	1.11	62.31
8.	"City Light" soap	23.84	2.00	0.66	32.51
9.	"L.N.R." soap	15.19	1.80	1.00	23.70
10.	"Paramount"	15.59	1.60	0.68	43.44
11.	"Ujala" (Sunlight type)	15.50	2.89	1.20	62.09
12.	"Doctor" (Carbolic type)	15.56	2.67	2.90	62.65

Aerosol Toiletries at Beauty Show

Growing importance of aerosol toiletries emphasized by growing number of new items shown at 14th annual Chicago Beauty and Fragrance Show. Lather shaves popular.

By H. H. Slawson

THE growing importance of aerosol dispensed products in the toiletries field was underlined at the 14th annual Chicago Beauty and Fragrance Show, held at the Palmer House, Aug. 26 to 31. Although some of the aerosol products shown have been on the market for from one to three years, a number of pressure packaged toiletries exhibited have been introduced only recently. Buyers attending the show expressed an active interest in all aerosol products and, from talks with distributors, many more aerosol toiletries can be expected in the near future.

Alfred D. McKelvy Co., New York, promoted its 10-ounce aerosol shave product, which was first introduced three years ago. Also featuring an aerosol shave lather was King's Men. This firm's reformulated product now has a more stable foam. The formula change, announced about four months ago, was made following the acquisition of King's Men early this year by Helene Curtis Industries, Inc., Chicago. Another aerosol shave cream exhibited by Yardley of London, Inc., New York, made its appearance about 18 months ago. Yardley also displayed an aerosol spray mist in three fragrances. This product is now about a year old.

John H. Breck, Inc., Springfield, Mass., featured "Breck Hair Set Mist," which has been on the market since last April. Two other aerosol toiletries were shown by Shulton, Inc., Clifton, N. J. Included was a perfume spray and an aerosol cologne. The contribu-

tion of Hazel Bishop, Inc., New York, to the parade of aerosol products was a hair spray containing lanolin. The product made its market debut three months ago. And in the Lucien Lelong line of General Beauty Products Co., Chicago, was a perfume cologne available in an aerosol dispenser.

Exhibitors at the Chicago Beauty and Fragrance Show occupied two complete floors at the Palmer House.

R. G. Seyffert, Chicago sales manager for John H. Breck, Inc., contributed an interesting sidelight on the public's reaction to aerosol dispensed toiletries. When the company began production of its new aerosol hair spray, he said, Breck had in stock what it thought was a year's supply of the fixative called for in the formula. Consumer demand for the new hair spray, according to Mr. Seyffert, was so great that the supply of fixative was exhausted in three months. Since U. S. supplies of the particular chemical were exhausted, it was necessary for Breck to buy the material and import it from Germany. Present indications are, Mr. Seyffert stated, that the domestic supply will be built up again by November.

Another trade note of interest came from John H. Bales, vice-president in charge of sales for Yardley of London, Inc., New York. He was asked about the complete absence of any polyethylene plastic type squeeze bottles for packaging the company's products. Yardley doesn't use this type of packaging, Mr. Bales said, because

of the permeability of the plastic, which permits the perfume to evaporate rapidly.

Mem, Inc., New York novelty soap firm, offered a new idea for the sales promotion of its novelty soaps. A boxed assortment of novelty soaps assembled for the convenience of soap collecting hobbyists has been developed by Mem. Among the 12 items available were packages containing a soap "football" with a plastic helmet; soap "golf balls"; soap "baseball" and plastic mitt which doubles as a soap dish; "fried eggs and bacon," all soap, and soap "rose buds." H. Bernstein, Chicago distributor for Mem, said soap collecting as a hobby is rapidly increasing in popularity. The use of novelty soaps is also being stressed for door prizes, prizes at card parties, grab bag prizes, etc., at social gatherings.

Hewitt Soap Co., Dayton, O., featured an exhibit designed to show how soap is made, Tom Morris, veteran sales representative explained. The exhibit took the visitor through the various stages of soap making from such raw materials as tallow and other fats and oils through the plodding and milling operations to the point where the soap is ready for the stamping die. The aim of the exhibit was to show how complex the soap making operation is, and how much simpler it is to buy private label soaps in any size, shape, color or odor the buyer desires.

Hewitt's familiar "Omnibus" and "Kensington" soaps and other lines were prominently displayed. Mr. Morris and his assistant, Frank Herman, also showed dealer promotions based on unusual soaps and packaging to call attention to the Hewitt slogan, "give the customer the break."

Among other well-known exhibitors of soaps and related items at the Chicago show were Lightfoot Schultz Co., New York; Allen B. Wrisley Co., Chicago; Tinkerbelle Children's Toiletries, and Trylon Products Co., Chicago.

Control of

Bacterial Spoilage of Emulsion Oils

By E. O. Bennett

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University of Houston
Houston, Texas

THE development of high speed metal cutting has resulted in the use of emulsion type cutting fluids composed of emulsifiers, rust inhibitors anti-foam agents, etc. The emulsifying agent is usually a soap of petroleum sulfonate, fatty acid, tall oil, or rosin. When the soluble oil is mixed with water a stable milk colored emulsion is formed that has the cooling properties of water and the lubricating and anti-corrosive properties imparted by the soluble oil formulations.

Emulsion oil concentrates are practically free of bacteria when sold to the customer. Westveer (16) believes that the sources of bacterial contamination may be as many and as varied as the applications of the emulsions. Westveer (16) found that contaminated water used to make up the emulsion was a contributing source of bacteria. This water in some instances came from rivers located near the factory. The open systems exposed to air, which contains bacteria, are another source of contamination. Circulation of the emulsion through the shop allows ample opportunity for the emulsion to become contaminated with bacteria as it flows over the hands of workers and collects in pans around the machines into which the worker may spit or urinate. Even feces has been found in emulsion oils by the C. B. Dolge Company (3). Weirich (15) reports that in many industries, men are encouraged to eat a snack at their machines, in the mid-morning and mid-afternoon. Particles of food

dropped or thrown into the emulsion provide an excellent nutrient for microorganisms.

The bacteria that find their way into the emulsion are capable of oxidizing emulsion components which results in spoilage and causes nauseating odors which hinder production. The coolant no longer serves the purpose for which it was intended and it is necessary to replace the emulsion and clean the machine.

The bacterial content of emulsions has been extensively investigated. Lee and Chandler (6) studied samples collected from different departments of one company over a period of five months. They found the bacterial counts usually averaged about 25 million organisms per ml., and ranged from 15 to 50 million per ml. Fresh emulsion used two hours contained 14,480,000 bacteria per ml. and in four days the bacterial content increased to 37,800,000 per ml. Weirich (15) examined used emulsions with bacterial counts as high as 300,000,000 organisms per ml. Duffett, Gold and Weirich (4) reported that the majority of 634 samples of emulsions taken from factories in the northeastern United States had bacterial counts of over one million organisms per ml. Fabian and Pivnick (5) studied 36 samples from machine shops in Michigan, Illinois, and Wisconsin and found that they contained from one million to 100,000,000 organisms per ml. Wheeler and Bennett (unpublished data) obtained bacterial counts ranging from 16,500,000 to 710,000,000 per ml.

Rosenberger (14) investigated the bacterial flora of oil emulsions and reported the presence of both sporeforming and non-sporeforming bacilli. Lee and Chandler (6) found the principal organisms in cutting emulsions to be a new species, *Pseudomonas oleovorans*. Duffett, Gold and Weirich (4) found that the majority of the species isolated from 30 different emulsion oil samples belonged to the genus *Pseudomonas*. In addition to *Pseudomonas oleovorans*, *Pseudomonas aeruginosa*, two species of *Achromobacter*, *Aerobacter aerogenes*, *Escherichia coli*, *Bacillus alvei*, and also yeasts and molds, they isolated six new species of pseudomonads. Each emulsion sample usually contained several different species and genera. Weirich (15) found *Escherichia coli* to be the second or third most common organism found in cutting emulsions and also noted the presence of staphylococci and *Pseudomonas aeruginosa*. Liberthson (7) presented evidence, but no definite proof, for the existence of anaerobic sulfate reducing bacteria in cutting oils. The C. B. Dolge Company (3) showed that *Escherichia coli* was present in large numbers and that streptococci and staphylococci were occasionally present. Pivnick (9) found micrococci, sarcina, flavobacterium, vibrio and many species of pseudomonads. Bennett and Wheeler (1) isolated a *Paracolon* and a *Salmonella* from used cutting oil samples and found considerable numbers of pseudomonads. Pivnick and Fabian (11) did not find *Escherichia coli* in

samples examined; however, they isolated *Aerobacter aerogenes* and coli-aerogenes intermediates as well as pseudomonads. Pivnick (13) isolated a new species, *Pseudomonas rubescens*, from soluble emulsions. Bennett and Wheeler (1) found large numbers of *Micrococcus pyogenes* var. *aureus* used emulsion sample from a plant where several workers were suffering from pyogenic infections.

Okawaki (8) reported that several species of intestinal pathogens survived and also multiplied in oil emulsions. Pivnick, Engelhard and Thompson (12) confirmed Okawaki's work. Wheeler and Bennett (17); and Bennett and Wheeler (1) showed that gram-positive pathogenic organisms were not capable of surviving in oil emulsions, but gram-negative pathogens remained viable for as long as 250 days in three different emulsions.

The control of bacteria in emulsion oils has been the object of research for many years, but it still presents a serious problem today. There are two reasons for interest in the subject; 1) industrial health problems may result from the dissemination of pathogenic microorganisms by cutting emulsions, and 2) manufacturers of cutting oils that are not readily oxidized by bacteria gain considerable advantage in the sale of their products.

Frequent pasteurization of the emulsion has been recommended as a means of controlling bacteria in cutting oils. However, the installation of such equipment is expensive and, unless all contaminating material is removed, the indigenous bacterial flora will grow to maximum population in a few days, according to Weirich (15).

Bacterial Inhibitors

BACTERIAL inhibitors to control or eliminate the microbial population and prevent degradation of the oil are often incorporated into cutting oils by the manufacturer. The manufacturer choosing an inhibitor must consider sev-

eral factors: 1) germicidal power, 2) level of toxicity, 3) stability, 4) solubility in the emulsion, 5) compatibility, and 6) cost. Inhibitors for emulsion oils must have germicidal activity in small concentrations for considerable periods of time. The inhibitor should be soluble in the soluble oil but water soluble in the emulsion. The reason for this is that the microorganisms are present in the water phase. Their enzymes attack the oil/water interface and water soluble components such as the rust inhibitor. Therefore, in order for the inhibitor to come in contact with the bacteria it is most effective in the water phase. The inhibitor must not produce undesirable changes in the emulsion. Often the concentration of the inhibitor is important in this respect. For example, 1,3-dichloro-5,5-dimethyl hydantoin is an effective emulsion inhibitor but if used in too high a concentration tends to cause breakage of the emulsion (Bennett, unpublished data). Cost is very important to industry but discouraging to the research worker. Several of the best inhibitors discovered in this laboratory are impractical because of cost.

In a search for bacterial inhibitors suitable for emulsion oils two lines of approach are available. First, through a knowledge of the metabolism of the organisms causing spoilage, compounds may be selected that will interfere with or prevent bacterial growth until multiplication ceases and spoilage of the emulsion is eliminated. Second, in the absence of specific information pertaining to growth of spoilage organisms the only recourse is to determine the ability of a wide variety of substances to inhibit multiplication of the bacteria. The latter method is commonly known as screening and is the method which has been most productive for finding drugs of clinical usefulness.

Because of the limited knowledge regarding the metabolism of the spoilage organisms in emulsions, the only method that

offers promise of early success is random screening.

The question often arises as to the basis on which one would select compounds for testing. Due to the nature of a screening program there should be no basis for selection except possibly the factors previously listed. The purpose of screening studies may be defeated when an attempt is made to find a rational basis for the selection of compounds. A screening program is necessary only because of the absence of any rational basis for the selection of substances for test. The random selection of compounds to be studied should be adhered to as strictly as possible.

The first investigation of inhibitors for cutting oil was carried out by Lee and Chandler (6). Their testing procedure was as follows: The desired quantity of inhibitor was mixed into 300.0 ml of used emulsion. At the end of 24 hours the mixture was reinoculated with a used cutting oil sample and aerated; after four days the test sample was contaminated with sputum and left uncovered for the rest of the experiment. Plate counts were made at one, three, five, and eight days to determine the effectiveness of the inhibitor. The test was stopped at eight days because of water evaporation from the emulsion.

Westveer (16) reported a method for studying anti-bacterial agents in cutting emulsions. An inhibitor was added to a fresh sample of soluble cutting oil emulsion and then inoculated with 0.1 ml. of a 24 hour broth culture for each 50.0 ml. aliquot of emulsion. The inoculum was composed of bacteria isolated from an emulsion furnished by the manufacturer. A sample of the emulsion was streaked on agar after 24 hours of incubation at 37 C. Absence of growth on the agar plates denoted an adequate concentration of inhibitor.

Pivnick and Fabian (10) employed a different type of testing procedure. Their tests were divided into two parts. A methylene blue reduction test was used to screen

possible inhibitors for emulsion oils. A four percent oil emulsion and 0.3 grams of iron chips were sterilized separately. The methylene blue cyanate solution was prepared by adding a 1.0 gm tablet to hot sterile distilled water. The oil and methylene blue solution were mixed in the ratio of 1:10. Ten ml. of the mixture was placed in the tube containing the iron chips and the inhibitor was added to make a 0.1 percent concentration. A mixture of heavily contaminated soluble oils obtained from several machine shops was employed as an inoculum. Compounds which inhibited reduction of the methylene blue for one week were considered suitable for more extensive studies using a circulation system.

The circulating test system consisted of a wide mouth jar containing 3600 ml. of a two percent soluble oil emulsion. The desired concentration of inhibitor was added to the oil. Compressed air forced the emulsion from the jar into a funnel containing iron chips and back into the wide mouth bottle containing the cutting oil. The oil was circulated for one week before it was inoculated with used emulsion. Each jar was re-inoculated on the 18th day with a used emulsion sample. The effectiveness of the inhibitor was determined by standard plate count methods over a period of 29 days.

Wheeler and Bennett's (18) testing units consisted of one gallon wide-mouth jars containing 3000 ml. of commercial cutting oil in a 1:40 dilution and a specific inhibitor in a concentration of 1000 ppm. Aeration and continuous mixing were accomplished by bubbling compressed air into the lower level of the emulsion. At the beginning of the experiment, each unit was inoculated with five ml. of a freshly collected used emulsion. Duplicate standard plate counts were made twice each week using sterile distilled water for dilutions and Difco Plate Count Agar for cultivation of the bacteria. The plates were incubated at 37 C. for 48 hours before counting. Control units con-

taining no inhibitor, were studied simultaneously with the units containing inhibitors. Because an open system was used, water was added to each unit at periodic intervals to prevent concentration of the inhibitors by evaporation.

Bennett (2) used the method recommended by Wheeler and Bennett (18). A closed system screening test was first carried out to determine potential inhibitors that might be effective and to eliminate the many compounds which were unsatisfactory in cutting emulsions. The soluble oil emulsion was mixed with an inhibitor, in concentrations of 100, 500, and 1000 ppm. The volume used was 19. ml. of oil emulsion and inhibitor. The tubes containing the emulsion and inhibitors and uninhibited controls were then sterilized. The tubes were inoculated with one ml. of used oil emulsion collected just prior to use. Several uninhibited controls were not inoculated to serve as sterility controls. The tubes were mechanically agitated by a laboratory shaker at room temperature for the seven-day screening period. Immediately after inoculation and at 24 hour intervals thereafter, .1 ml. amounts of the emulsion were inoculated into nutrient broth. The inoculated broth tubes were incubated for 48 hours at 37 C. and examined for turbidity. If the emulsion itself caused cloudiness of the broth, subcultures were made at the end of 24 hours into additional nutrient broth tubes. The screening test was carried out for 7 days as it was determined that compounds which did not produce sterility within this period usually were unsatisfactory when tested in the open system. Compounds which sterilized the emulsion in the seven day testing period were studied in the open system described by Wheeler and Bennett (18).

(To be concluded)

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New Lightweight Soap Jar

A new lightweight, plastic, screw-top jar, designed for packaging soap bubble liquids and cosmetics, was introduced last month by Parkway Plastics, Inc., New Market, N. J.

Made of shatterproof polystyrene, the containers are said to be up to 80 percent lighter than comparable glass or ceramic jars. They are available in sizes of one-half, two, four, eight and 16 ounces.

Complete Detergent Unit

(From Page 37)

protected from metal contamination by this means include lauric isopropanolamide, various waxes, lauryl alcohol sulfate jelly and sodium lauryl sulfate pastes, powders, and needles, shampoo and liquid detergent concentrates, and ammonium and triethanolamine lauryl sulfates. A very large number of products still travel in wooden casks or barrels, including among others sulfated cetostearyl and oleyl alcohols and sodium dodecyl benzene sulfonate. Other materials are packaged in the conventional mild steel drums, water-proofed paper or burlap bags and corrugated cases.

Marchon History

FIRST registered in 1939 as a limited company with a nominal capital of one thousand pound sterling (\$2,840), the firm now employs 1,650 people, can be regarded a major unit in the British industrial picture and a very definite factor in the surfactant world. Mainspring of this remarkable development is the truly dynamic personality of Frank Schon, chief executive officer and chairman of the Marchon and Solway boards. Other ingredients of this success story are sheer hard work, foresight and shrewd judgment, sound financing from within and financial help from government and government sponsored bodies, and, last but not least, more than a little good luck.

The firm was founded by Frank Schon and Fred Marzillier, who now is vice-chairman of both boards and joint managing director, a position corresponding to executive vice-president in an American company. With them was O. Secher, now sales director in charge of packaged products. Bombed out of its City of London offices in 1940, the firm moved to Whitehaven, where it began to manufacture fire lighters. A little

later a toilet goods manufacturer who had lost his production facilities in London asked Marchon to do custom label work for him.

During the war years, raw materials, equipment and especially man power were hard to come by. Marchon made fatty alcohol sulfates from purchased raw materials and supplied them to the textile and leather industries. Manufacturing facilities consisted of two small vessels, maintained by night workers who were employed in essential occupations during the day. According to Mr. Schon: "Directors themselves took an active part in the manufacturing operations. We also continued to make fire lighters, which were still a major part of our business. . . . All profits were ploughed back into the business; the takings of individuals were small, as we worked seven days a week and had little time to spend any money."

In 1945 B. B. Dugan came to Marchon as chemical sales director. War industries closed down and Marchon was able to secure equipment and the services of skilled technicians: A. C. Halfpenny joined the firm as chief chemist and brought with him a team of chemists and engineers from nearby ordnance factories. Mr. Halfpenny now is joint managing director, holding a position similar to a vice-president in charge of production and development. During these ensuing years, Marchon graduated from processor to basic manufacturer. The decision was made to concentrate on the manufacture of detergents up to the point where they could be marketed by existing market organizations with Marchon steering clear of building a consumer sales organization.

Financial Development

IN 1949 Marchon received for the first time major help from the outside: a government sponsored organization, set up to develop economically "distressed" areas, such as West Cumberland, provided under a long term lease

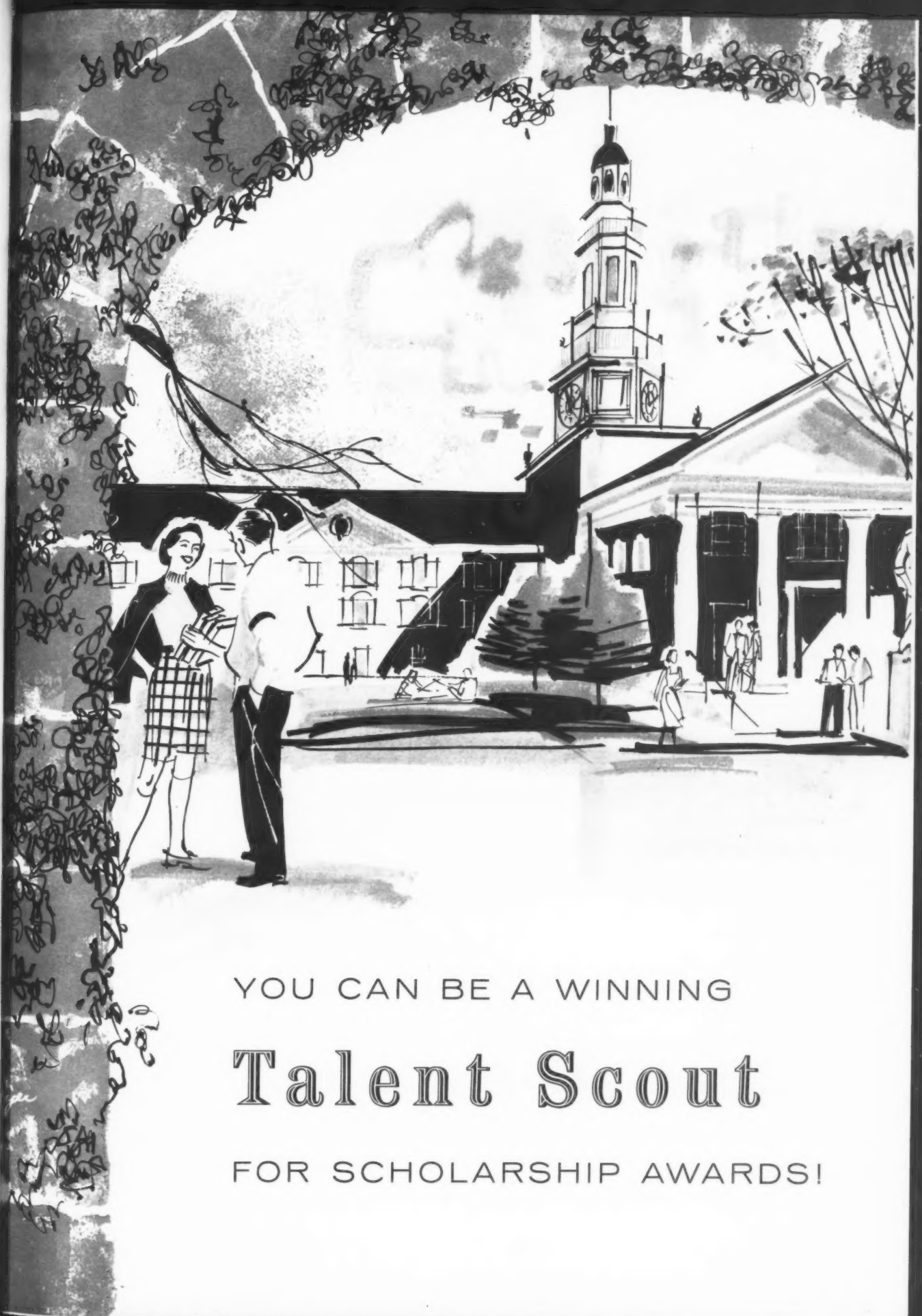
75,000 square feet of manufacturing and storage space and 12,000 square feet of office space. Outside finance was acquired under an arrangement with the Industrial and Commercial Finance Corp., who became minority shareholders. Together with the shareholders some £300,000 were provided. In addition to the founders, the shareholders included at that time Mr. Secher, Mr. Halfpenny, and Mr. Dugan. They reinvested all the money obtained on the sale of their shares to the outside minority holders.

During the period 1949 to 1951, close contacts were developed with the major soap companies, some of whom buy from Marchon complete products manufactured under their label while others buy basic materials for their own detergent operations.

The Solway project was conceived in 1951 during the peak of the world wide sulfur crisis, when supplies to Britain were cut by one third under the United States export control scheme. The British government set up its own rationing scheme and sponsored a £25,000,000 investment program to cope with the sulfur situation. The Solway plant was started in 1952. The project cost about three million pound sterling of which the treasury subscribed in loan capital about £2,350,000. In the summer of 1955 the sulfuric acid plant went on stream.

Marchon / Solway remained a private company until the end of 1955, when it became a member of the Albright & Wilson Group, and thus part of a "public" company.

The firm's selling is done by an executive team of five: M. Dufaye, export sales manager; G. W. Pekarek, home sales manager of chemicals, working out of Whitehaven; F. Riley, home sales manager for toilet article raw materials, headquartered in London in an office near Marble Arch; A. Taylor, sales service manager, a frequent visitor in the United States; and R. D. Cribb, public relations officer.



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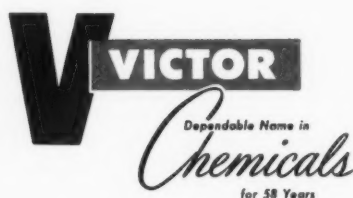
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- 2 All residents of the continental United States are eligible to enter, except students, employees of Victor Chemical Works, their families, or members of their advertising agency.
- 3 Each contestant may enter the contest one time only.
- 4 Entries will be judged by The Reuben H. Donnelley Corporation. The decision of the judges will be final. In case of ties, duplicate prizes will be awarded. All entries and ideas presented become the property of Victor Chemical Works.
- 5 Contest closes midnight, November 30, 1956. All entries must be postmarked not later than that date and received not later than December 14, 1956. Entries must be mailed First Class to: Victor Talent Scout Contest, P. O. Box 5767, Chicago 77, Illinois.
- 6 Winners will be notified no later than March 1, 1957.
- 7 If you are one of the 20 winners, you will earn the right to nominate a 1957 high school graduate of your choice for a 4-year, \$4,000.00 scholarship in science or engineering.
- 8 Of the 20 graduates nominated, 4 will be elected for 4-year scholarships.
- 9 The 4 winning nominees will be selected by a committee appointed by the American Chemical Society. Nominees will be eligible on the basis of rules sent at the time the winning entries are selected.



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Calcofluor White M2R New	slightly reddish blue	cotton, viscose
Calcofluor White 2R Conc.	slightly reddish blue	cotton, viscose
Calcofluor White SD	neutral blue	nylon, acetate, wool, orlon, acrylic
Calcofluor White LD	neutral blue	nylon, acetate, wool, orlon, acrylic

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Wilson Named Armour V-P

Edward W. Wilson has been elected executive vice-president of Armour and Co., Chicago, it was



Edward W. Wilson

announced late last month by F. W. Specht, president and chairman. Mr. Wilson has been group vice-president, supervising non-food divisions of the company, since May, 1955. He will continue in that position.

Mr. Wilson joined Armour in 1917 as a chemist. He was appointed manager of the glycerine and raw material department in 1923 and was named vice-president and general manager of Armour auxiliaries, which includes soap, chemicals, adhesives, etc., in 1949.

In 1955 he was president of the Association of American Soap and Glycerine Producers, Inc., New York. He also served the organization as vice-president for midwestern states in 1950, 1951, 1953, and 1955, and as a member of the board of directors from 1949 to 1955.

Babbitt Buys Aerosol Firm

B. T. Babbitt, Inc., New York, has acquired Connecticut Chemical Research Corp., Bridgeport, Conn., producer of aerosol products and packages, it was announced recently. The acquisition was effected through the exchange of 30,000

shares of Babbitt's proposed series. A five percent cumulative convertible \$50 par preferred stock and 10,000 shares of Babbitt's proposed series B three percent \$50 par preferred stock for all the outstanding shares of Connecticut Chemical.

Harold N. Crooker Retires

Harold N. Crooker, active in the soap industry in various technical and management capacities for more than 35 years, recently announced his retirement. At the time, Mr. Crooker was manager of the Bristol, Pa., plant of Manhattan Soap Co., New York. Following a protracted vacation he plans to engage in consulting work in the soap and allied industries.

A graduate of Carleton College, Minn., Mr. Crooker did post graduate work at the University of Minnesota before commencing his soap career in 1921 in the research and development division of Procter & Gamble, Cincinnati. He later served with P&G's cost analysis, supervision of edible oils and glycerine divisions.

In 1928, Mr. Crooker joined Colgate-Palmolive Co., Jersey City, where he remained for 16 years holding various managerial posts including supervisor of the company's Jeffersonville, Ind. plant. He left C-P in 1944 to become supervisor of managerial operations at Manhattan's Bristol plant, a position which he held until his retirement.

New Waterless Skin Cleaner

A new, waterless skin cleaner, designed to remove ink, grease, paint, dirt, and carbon stains, has been introduced by Underwood Corp., New York, it was announced recently. The new product, trade-named "Waterless," contains lanolin, and comes packaged in a five-ounce blue and white plastic tube retailing for 59 cents.

Lasthuysen To Colgate

Willem Lasthuysen, former chief chemist of Dodge & Olcott, Inc., New York, has joined the per-



William Lasthuysen

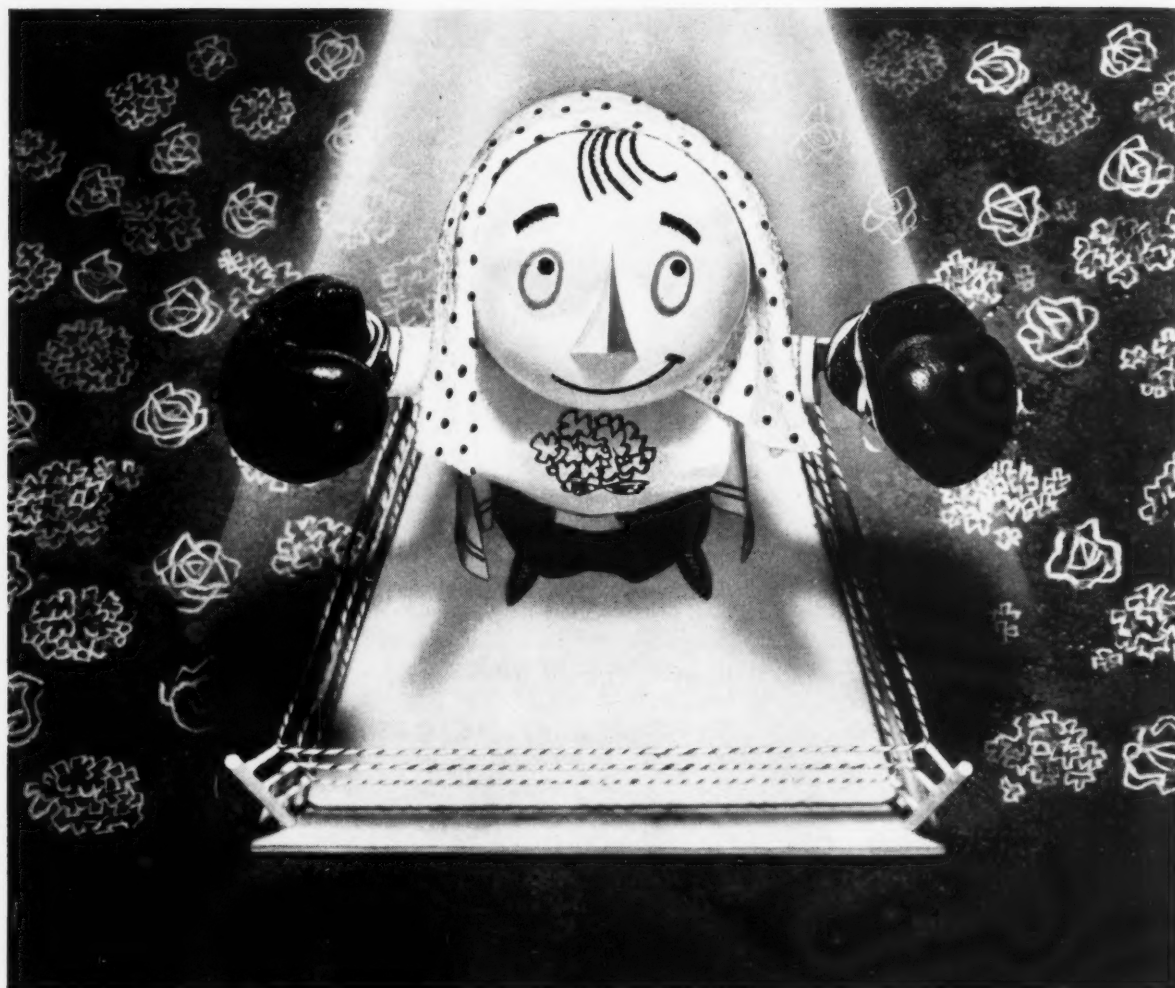
fumery and essential oils division, research and development department of Colgate-Palmolive Co., New York. The appointment was announced late in September by Thomas H. Vaughn, Colgate vice-president.

Prior to joining D & O, Mr. Lasthuysen was associated with the manufacturing operations of the A & P chain, where he was engaged in the development of flavors and perfumes for household and other specialties.

In 1945 Mr. Lasthuysen founded the South American affiliate of Chemische Fabriek Naarden, one of the foremost European essential oil and aromatics houses. He had formerly served as a research chemist in Naarden's home factory in Holland. A graduate of the Universities of Utrecht, Holland, and Bonn, Germany, he has published numerous contributions in the flavor and aromatics field.

Warren Chemical Moves

Warren Chemical Manufacturing, Inc., Brighton, Mass., formerly Warren Soap Co., has moved to its new plant at 600 Pleasant St., Norwood, Mass., it was announced recently.



Introducing Rogepel... the new rose geranium champ!

New Dow synthetic specialty
beats natural oil on three counts—
aroma power, stability and price!

The championship has changed hands. The new Dow synthetic specialty, ROGEPEL*, replaces the natural Rose Geranium oils—and producers of soaps, detergents, shampoos and cosmetic fragrances will give the new champ a standing ovation!

More aroma power . . . greater stability . . . lower price. These are the main advantages of ROGEPEL. There are still others: consistent high quality and prompt delivery. To sum it all up, ROGEPEL gives you a more effective product at a much lower price. What better reason than that for trying this outstanding new product!

A sample is yours for the asking. Write on your letterhead to THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. AR 866C-1.

*Trademark

you can depend on DOW AROMATICS



Stepan Advances Black

Stepan Chemical Co., Chicago, recently announced the appointment of E. J. Black as sales



E. J. Black

manager. Mr. Black formerly was eastern sales manager. A graduate of Lafayette College, he previously had served as sales manager of Warwick Chemical Division of Sun Chemical Corp., Long Island City, N. Y., and in sales and research at General Aniline and Film Corp., New York.

P & G Education Grants

Nearly \$100,000 in graduate fellowship grants for the 1956-57 academic year were announced recently by Procter & Gamble Co., Cincinnati. The grants are part of the \$650,000 aid-to-education program sponsored each year by the company. The fellowship program will provide support for fifty graduate students at eighteen colleges and universities throughout the country. For most part the fellowships have been awarded to students in chemistry, chemical engineering and mechanical engineering. However, there are also three special purpose fellowships in the fields of biochemistry, pharmacology and food technology. While most of the awards are given to students working towards their doctorate degrees, some are to be granted to those studying for masters of science degrees.

The schools receiving the grants are: The universities of California, Cincinnati, Cornell, Har-

vard, Illinois, Michigan, Minnesota, Ohio State, Princeton, Purdue, Rochester, Southern California, Texas, Washington, Wisconsin and Yale, Iowa State College and Massachusetts Institute of Technology.

C-P Appoints Schurman

The appointment of Jack V. Schurman as division head of the research and development department of Colgate-Palmolive Co., Jersey City, N. J., was announced recently by Thomas H. Vaughn, vice-president. Mr. Schurman formerly served as group leader in the exploratory organic chemistry department. He is replaced by William G. Alsop.

Mr. Schurman joined Colgate in 1950 as a research chemist and was advanced to group leader in 1954. He previously had worked as a research chemist with Allied Chemical and Dye Corp., New York, and Hercules Powder Co., Wilmington, Del. A graduate of Harvard University, he received his M.S. degree from Brooklyn Polytechnic Institute where he is now a candidate for a Ph.D. degree in organic chemistry.

Dr. Alsop joined C-P in 1941 and shortly after became a research chemist. He was graduated from the University of Toronto and received both M.S. and Ph.D. degrees from the University of Chicago.

Solvay Product Renamed

Solvay Process Division, Allied Chemical & Dye Corp., New York, recently announced "Ozene" as the new trade name for its odor suppressant and solvent-cleaner previously called "Orthosolv." The composition properties and uses of the product remain the same.

"Ozene" is an emulsifiable ortho-dichlorobenzene compound to control offensive odors from many sources including garbage and refuse disposal, industrial wastes and trucks. It also is used to remove sludge in fuel oil tanks and greases, tars and oils from floors, machinery, tools and metal parts.

In New CSC Posts

Commercial Solvents Corp., New York, recently announced the appointments of William W. Wil-



Richard T. Ozimek

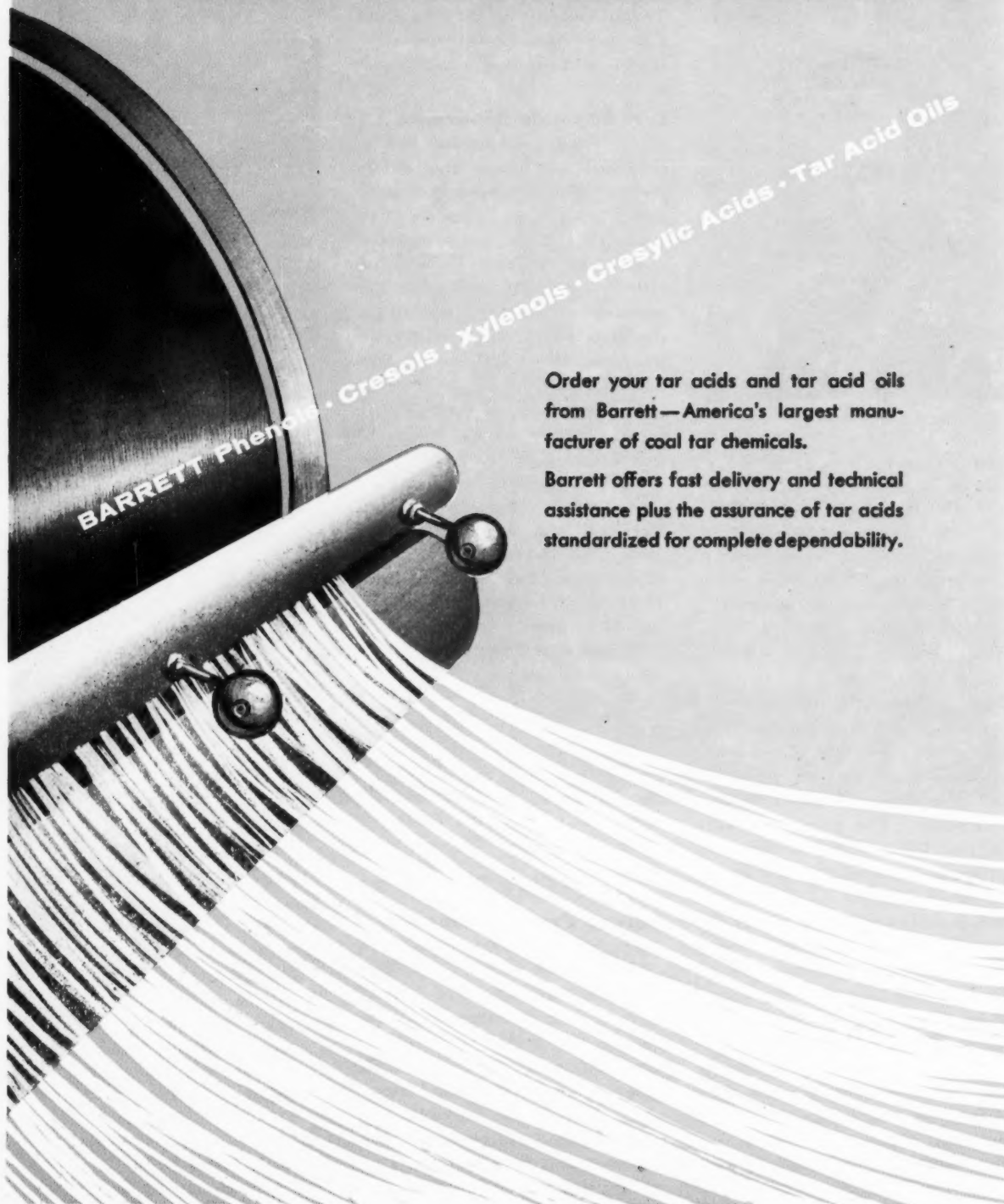
son and Richard T. Ozimek, to positions of manager of terminals for the petrochemicals division and supervisor of petrochemicals market research, respectively. A member of Commercial Solvents since 1936 Mr. Wilson has held important positions in the company's research, engineering and production programs. Prior to joining CSC he was engaged in water survey activities with the state of Illinois as a staff chemist.

Mr. Ozimek will be responsible for coordination of all market research for the firm's petrochemical products, and will make his headquarters at the New York office. A graduate of Rutgers University, Mr. Ozimek served for many years as a research chemist at Picatinny Arsenal, Huntsville, Alabama. Most recently he held the position of market analyst with the National Aniline Division, Allied Chemical and Dye Corp., New York.

P & G Issue Sold

Underwriters have bought out the new issue of \$70,000,000 debentures of Procter & Gamble Co., Cincinnati, it was announced recently. The issue was over-subscribed and the new bonds were bid up to a premium in the free market.

IN YOUR CARBOLIC SOAPS



BARRETT Phenols • Cresols • Xylenols • Cresylic Acids • Tar Acid Oils

Order your tar acids and tar acid oils from Barrett—America's largest manufacturer of coal tar chemicals.

Barrett offers fast delivery and technical assistance plus the assurance of tar acids standardized for complete dependability.



BARRETT CHEMICALS

BARRETT DIVISION, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N.Y. In Canada: The Barrett Company, Ltd., 5551 St. Hubert Street, Montreal, P. Q.
OVER 100 YEARS OF EXPERIENCE



New "Clean-Cote" Cleaner

A new three-way concentrated neutral cleaner, that also waxes and is claimed to disinfect in one



application, has been introduced by Clean-Cote Co., Kansas City, Mo., it was announced recently.

Tradenamed "Clean Cote," the product is designed for use on wood, asphalt, rubber, vinyl, terrazo and tile floors, plus wood-work, enamel and porcelain.

—★—

Purex to Sell Direct

Purex Corp., South Gate, Calif., recently announced that it has adopted, effective Oct. 1, the policy of direct sales representation for all Manhattan Soap and Purex brands distributed to food stores in the United States. Purex recently acquired the Manhattan franchise.

Heretofore, Purex had sold its products nationally through a combination of 82 food brokers and its own sales force. With a few exceptions, Manhattan had sold direct. The expansion of the product line, plus an increase in volume of sales, has made it necessary for Purex to follow the sales policy of major competitors in the soap and detergent field and operate with direct company representation. The Manhattan sales organization is being integrated with the Purex sales force to provide na-

tional coverage. Robert F. Sharp, vice-president and general sales manager will head the new sales organization.

—★—

West End Earnings

Net sales of West End Chemical Co., West End, Calif., totaled \$3,724,352 for the six months period ending June 30. Net income and share earnings amounted to \$752,869 and 21 cents. No comparative figures are available.

—★—

A-D-M Dividend Record

Archer-Daniels-Midland Co., Minneapolis, extended its record of consecutive payment of quarterly dividends to 100 when the board of directors recently announced a dividend of fifty cents per share, payable to stockholders of record on Aug. 20th. The company has paid uninterrupted quarterly dividends since Dec. 1, 1931 and in the same period has declared 14 extra cash dividends on its common stock each year without exception since 1927.

New Givaudan Lab

L. Givaudan & Cie, S. A., Geneva, Switzerland, parent company of Givaudan-Delawanna, Inc., and Sindar Corp., New York, recently announced the remodeling of the microanalytical laboratory at the Vernier plant. The new facilities are part of a laboratory for infrared and ultraviolet as well as micro-

William H. Alexander Dies

William H. Alexander, 49, advertising manager of the drug products division of Procter & Gamble Co., Cincinnati, died on Sept. 15 while playing golf at the Cincinnati Country Club.

—★—

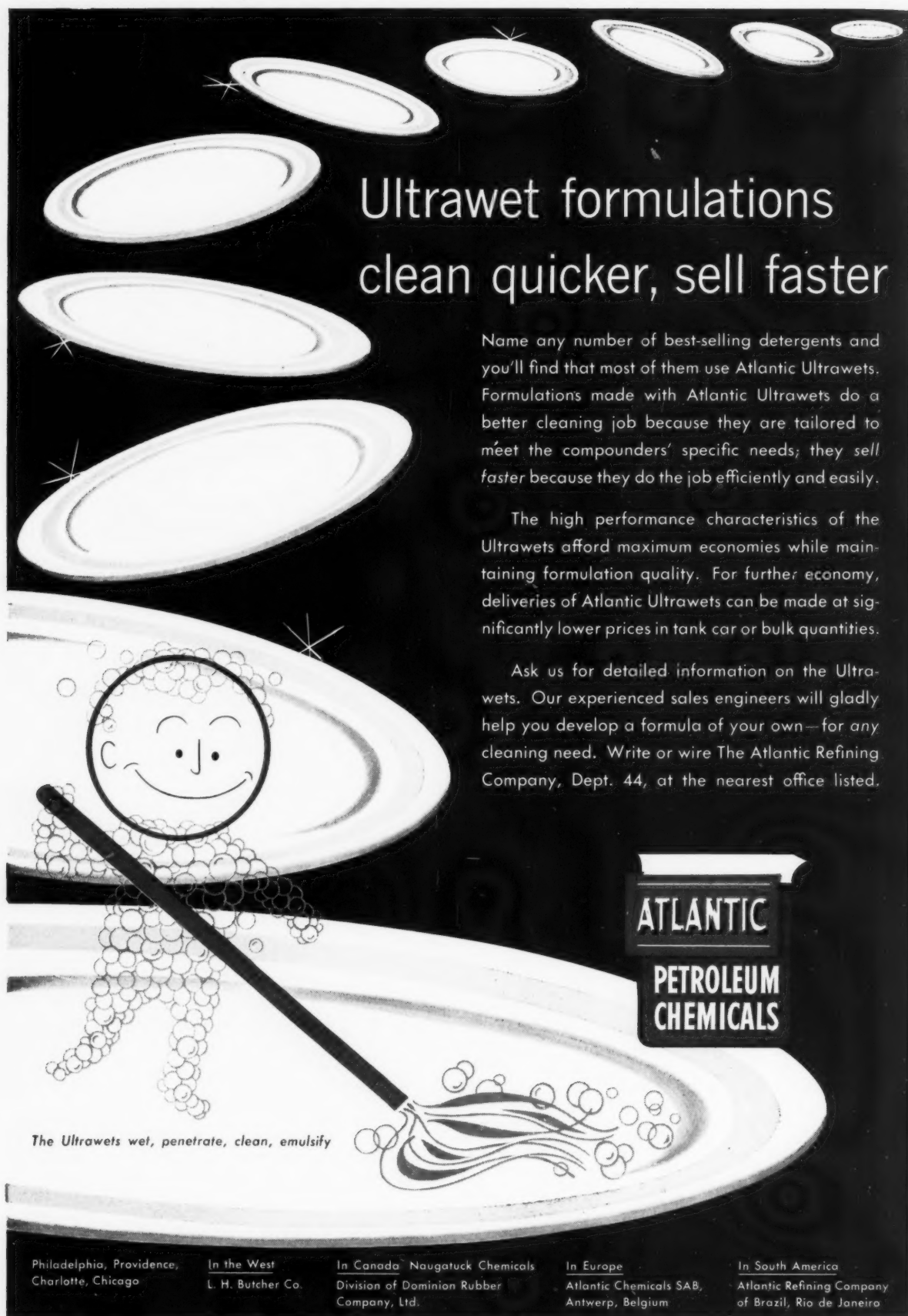
Canadian Firm Expands

Chemical By-Products Ltd., Toronto, manufacturer of waterless and powdered industrial soaps and cleansers, recently announced construction of a new processing and packaging plant on a six-acre site at 23 Racine Road, Toronto. The firm is a wholly-owned subsidiary of Sugar Beet Products Co., Saginaw, Mich.

The new unit, which occupies 33,000 square feet, will have the latest processing and packaging equipment available including complete facilities for filling and sealing polyethylene tubes and bottles. Future plans call for the construction of a separate plant at this location for the manufacture of polyethylene containers.

wave spectrometries. The new air-conditioned laboratory is equipped with several late models of semi-automatic sets for elemental analysis. The functional microanalysis for the evaluation of alcohols, esters, lactones, aldehydes, and ketones, will permit the analysis of essential oils with a sample of as little as a few centigrams.





Ultrawet formulations clean quicker, sell faster

Name any number of best-selling detergents and you'll find that most of them use Atlantic Ultrawets. Formulations made with Atlantic Ultrawets do a better cleaning job because they are tailored to meet the compounders' specific needs; they sell faster because they do the job efficiently and easily.

The high performance characteristics of the Ultrawets afford maximum economies while maintaining formulation quality. For further economy, deliveries of Atlantic Ultrawets can be made at significantly lower prices in tank car or bulk quantities.

Ask us for detailed information on the Ultrawets. Our experienced sales engineers will gladly help you develop a formula of your own—for any cleaning need. Write or wire The Atlantic Refining Company, Dept. 44, at the nearest office listed.

ATLANTIC
PETROLEUM
CHEMICALS

The Ultrawets wet, penetrate, clean, emulsify

Philadelphia, Providence, Charlotte, Chicago	In the West L. H. Butcher Co.	In Canada: Naugatuck Chemicals Division of Dominion Rubber Company, Ltd.	In Europe Atlantic Chemicals S.A.B., Antwerp, Belgium	In South America Atlantic Refining Company of Brazil, Rio de Janeiro
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MM&R Honors McGlynn

George H. McGlynn, vice-president and treasurer of Magnus, Mabee & Reynard, Inc., New York, was honored at a company luncheon held last month at India House, New York, in commemoration of his 37-years service with the firm. The affair was attended by a large group of business friends and MM&R executives.

★

Emery Appoints Sonntag

The appointment of Norman O. V. Sonntag to the research staff of Emery Industries, Inc., Cincinnati, was announced recently by R. C. Kadesch, director of research. In his new post Dr. Sonntag will be in charge of research of synthetic lubricants.

Dr. Sonntag received his Ph.D. from Brooklyn Polytechnic Institute, where he also obtained his Masters Degree. He formerly served as chief chemist for the chemical division of Celanese Corp. of America, New York.

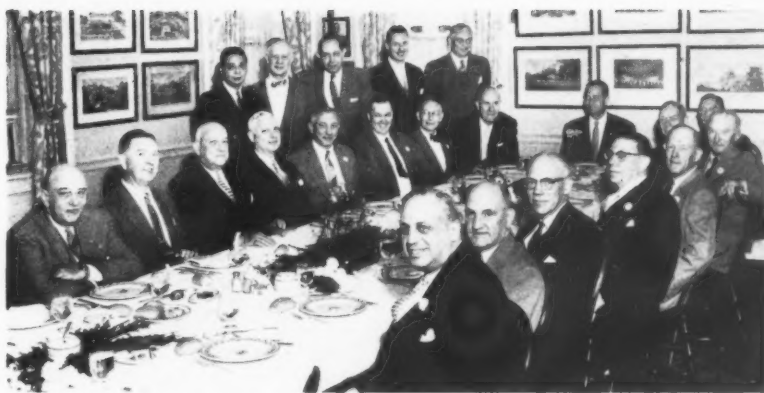
★

New Wyandotte Plant

Plans for the construction of a \$20,000,000 electrolytic chlorine-caustic soda manufacturing plant at Geismar, La., was announced recently by Robert B. Semple, president, Wyandotte Chemicals Corp., Wyandotte, Mich. The new facilities will be constructed adjacent to the company's 60,000,000-pound ethylene-oxide plant on the 1,200-acre site acquired by Wyandotte several months ago at Geismar, which is located 25 miles south of Baton Rouge. Clearance of the site for the ethylene-oxide plant was begun in August.

The new unit is the second major phase of the firm's southern expansion program. It will have a daily production of 300 tons of chlorine and 330 tons of caustic soda. This more than doubles the firm's present capacity.

Mr. Semple added that Wyandotte's research and engineering division will do the process engineering for the chlorine-caustic soda unit and will award contracts for construction, engineering and



George H. McGlynn, seated, second from left, center, vice-president and treasurer of Magnus, Mabee & Reynard, Inc., New York, at company luncheon honoring him on 37 years with MM&R. Robert Magnus is on Mr. McGlynn's right and Percy C. Magnus and Joseph B. Magnus are seated at his left.

equipment by late November. The plant will go on stream in the latter half of 1958.

Bert Cremers, vice-president of Wyandotte and general manager of the Michigan Alkali Division, which will operate the Louisiana facilities, said that the new unit is expected to open additional large tonnages of business heretofore closed to the company because of freight costs from the Michigan plants. Mr. Cremers added that Wyandotte chose the Louisiana site because of the availability of large quantities of ethylene, salt, natural gas and electric power and excellent waterway shipping facilities.

★

Frank Homer Bell Dies

Frank Homer Bell, 59, southern sales representative and field

export manager of Philadelphia Quartz, Co., Philadelphia, died Aug. 30 in Atlanta, Ga., following an illness of several months.

A graduate of the University of Kentucky, Mr. Bell joined Philadelphia Quartz in 1923 as a salesman at the firm's St. Louis office. He was appointed southern sales representative, with headquarters in Atlanta, in 1934.

Surviving are his widow, a son, Frank Homer Bell, Jr., and a daughter, Barbara.

★

A-D-M Fatty Acid Data

A new four-page bulletin, showing specifications and typical uses of "Hydrofol" fatty acids, glycerides, sperm oils and fatty alcohols, was issued by the chemicals products division, Archer-Daniels-Midland Co., 2191 West 110th St., Cleveland 2, O., it was announced recently. The bulletin features a chart on new saturated and unsaturated higher fatty alcohols currently being produced by the company.

★

New Coastal Rug Cleaner

Coastal Chemical Corp., Garfield, N. J., has added a new pre-shampoo, powdered sequestant to its line of rug-cleaning chemicals, it was announced recently. Called "Super Rug Spark," the product can be used in conjunction with any rug shampoo. It is said to remove grease and heavily embedded soil particles in one cleaning and is recommended for use on pastel shade broadloom rugs.

Max Ramsey, chief chemist; C. R. Herring, sales manager; Charles Stager, superintendent, and Rex Sachs, chief control chemist, A. R. Maas Chemical Co., South Gate, Calif., stand around drum of first commercial quantities of potassium phosphate produced in western U. S. With production of anhydrous tetrapotassium pyrophosphate, Maas becomes the only western manufacturer of these chemicals which are used in new heavy duty liquid synthetic detergents.





Quality reaches the highest peaks in

GIVAUDAN'S CYCLAMEN ALDEHYDE

In this widely used aromatic chemical, Givaudan has achieved an unsurpassed standard of quality and uniformity.

A pure synthetic body, Cyclamen Aldehyde is made under rigid control from readily available domestic materials. It is stable in price as well as in olfactory and chemical quality.

With its intensely floral scent, Cyclamen Aldehyde is most useful in lily-of-the-valley, lilac, linden and cyclamen fragrances; in floral bouquets; and in cream and soap perfumes.

Givaudan offers Cyclamen Aldehyde in different grades to meet the varying needs of the perfumer. Our staff will gladly help you determine the grade best suited for your particular requirements.



GIVAUDAN-DELAWANNA, INC.

330 West 42nd Street, New York 36, N. Y.

SOAP and CHEMICAL SPECIALTIES

Improved Hand Cleaner

An improved powdered hand soap, designed to remove printers ink from hands and fingernails, has been introduced by Schultz Laboratories, Boone, Ia., it was announced recently.

Tradenamed "Ink-Solv 30," the product contains a cold cream base which is said to protect hands against chapping. It comes in one, 10 and 24-pound metal cans, a 50-pound carton and 100-pound drums. A new all metal, chrome-plated dispenser, designed to measure the exact amount of powder for each hand wash, is also available.

—★—

New Borax Laboratory

U. S. Borax & Chemical Co., Los Angeles, recently announced the construction of a new chemical research laboratory at Anaheim, Calif. The new laboratory, which will be fully equipped for all phases of chemical research, will include, distillation room, instrument laboratory, heavy experimental equipment room, a greenhouse for agricultural investigations, and a library for use by the professional staff. A large lunchroom will also serve as a lecture room and a center for the showing of motion pictures. Occupying an area of 30,000 square feet the building will be of reinforced concrete. Construction which began last month is scheduled for completion in April, 1957. The laboratory will conduct research for all three operating divisions of U. S. Borax. These divisions are Pacific Coast Borax Co., New York, United States Potash Co., New York, and 20 Mule Team Products Division, Los Angeles.

—★—

New Fritzsche Catalog

Fritzsche Brothers, Inc., 76 Ninth Ave., New York 11, N. Y., recently announced publication of its latest wholesale price list of essential oils, aromatic chemicals and related materials. The catalog is divided into 15 sections covering perfuming materials and flavoring compounds. It is available only to



New "Essanee" lotion type skin cleanser of S & E Chemical Co., 1751 N. Harding Ave., Chicago 47. May be used in existing dispensers without waste according to the maker. Available in gallon jugs, it rounds out company's line of skin cleansers. The cleanser is lightly perfumed and may be used for removing heavy grease and grime.

wholesale purchasers of these materials.

—★—

Solvay Names Two

Two managerial appointments at the Brunswick, Georgia plant of Solvay Process Division, Allied Chemical & Dye Corp., New York, were announced last month by H. R. Margetts, director of operations. Wilbur L. Epting has been named manager of the new chlorine-caustic soda plant, while Bruce T. Smith was appointed assistant manager.

Frank L. Weill, left, newly elected chairman of B. T. Babbitt, Inc., New York, a director since 1923, succeeds the late Alan N. Mendleson. Alan N. Mendleson, Jr., son of the late chairman, was elected to the board of directors to fill vacancy caused by his father's death, Aug. 14. Mr. Mendleson has been with the firm for seven years.



Cowles Price Rise

Price increases averaging five to six percent on three detergent sodium silicates were announced recently by Cowles Chemical Co., Cleveland.

Anhydrous sodium metasilicate—both regular grind and fine—will be priced at \$5.70 per 100-pounds in 100-pound paper bags and \$6.20 per 100-pounds in 400-pounds drums. Pentahydrated sodium metasilicate will sell for \$4.45 per 100-pounds in 100-pound paper bags and \$4.95 per 100-pounds in 325-pound drums. Anhydrous sodium orthosilicate, available only in 400-pound drums, will sell for \$6.70 per 100-pounds. All prices are based on carload or truck-load lots.

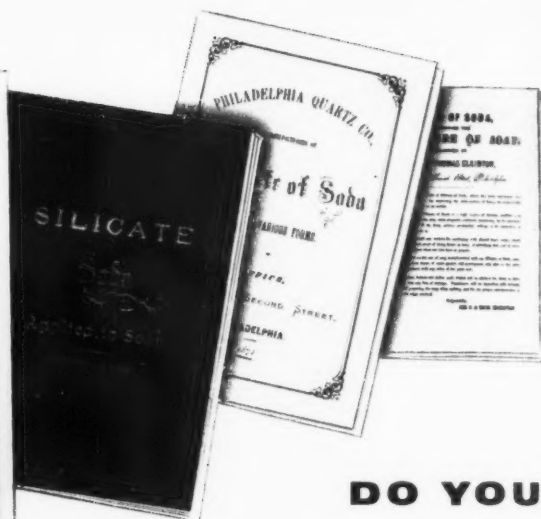
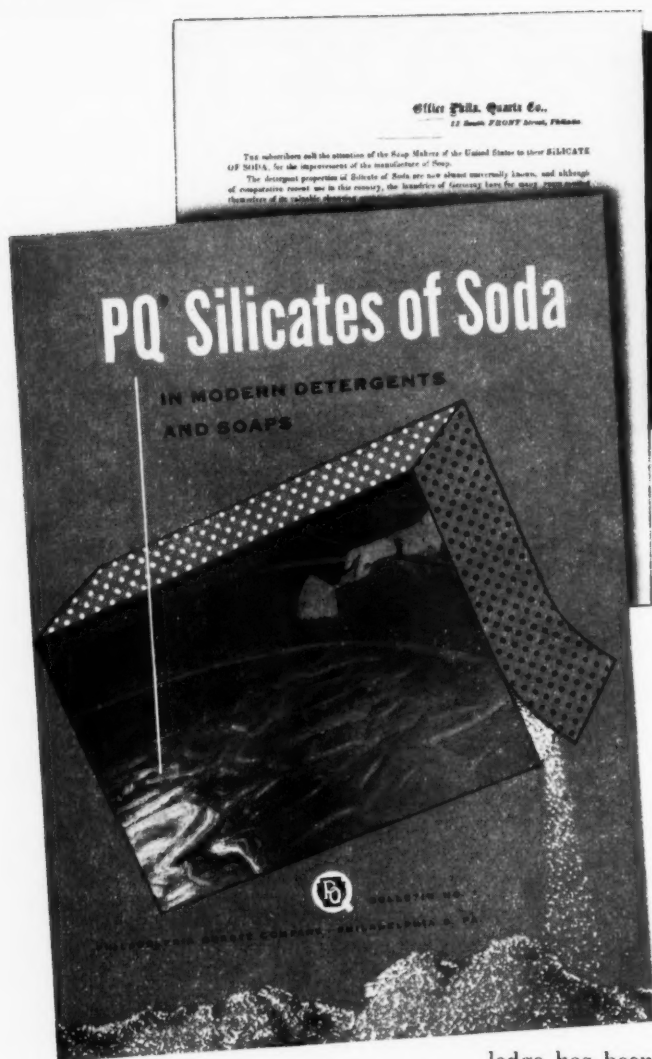
—★—

Wise Joins Emery

Louis M. Wise has joined the research staff of Emery Industries, Inc., Cincinnati, it was announced recently by R. G. Kadesch, director of research. Dr. Wise will be in charge of research on dry cleaning processes for the company's process research section.

Prior to joining Emery, Dr. Wise served in a research capacity with Hercules Powder Co., Wilmington, Del. He holds a B.A. and a M.A. degree from Queens University, Kingston, Ont., and a Ph.D. degree from McGill University, Montreal.





DO YOU KNOW PQ SILICATES OF SODA?

*... reliable synthetic
detergent builders*

From the time silicate builders were added to our own soaps (1858), research into the detergent values of the soluble silicates has been continued. With the modern synthetic detergents, again PQ silicates are used to increase detergency and to obtain the added advantage of protecting metals from corrosive attack.

A vast fund of silicate detergent knowledge has been consistently available—our first printed folder "Silicates of Soda For the Improvement of the Manufacture of Soap" appeared in 1864. Do you have copies of current PQ publications on soluble silicates in soap and modern detergents? Check any of the following which is of interest to you.

PQ Silicates of Soda in Soaps and Modern Detergents
The Value of Silicate of Soda as a Detergent
Phase Study of Commercial Soap-Alkaline Electrolyte-Water Systems
A Phase Study of Sodium Palmitate-Alkaline Electrolyte Water Systems
Silicates in Soaps
Solubility Study of an Aqueous Potassium Laurate-Potassium Silicate System
Potassium Silicates in Soaps
Silicate of Soda as a Detergent

Spectrophotometric Study of Reaction of Sodium Sols with Sulfuric Acid and Ammonium Sulfate
Suspending Action of Alkaline Electrolytes on Ilmenite Black
Solubilization and Cosolvent Effect with Sodium Stearate Alkyl Aryl Sulfonate Builder Mixtures
Viscosity of Potassium Soap-Potassium Silicate Mixtures
Viscosities and Solubilities of Synthetic Detergent Mixtures Containing Soluble Silicates
Silicates as Corrosion Inhibitors in Synthetic Detergent Mixtures



SILICATE OF SODA

METSO DETERGENTS

PHILADELPHIA QUARTZ COMPANY
1152 Public Ledger Building, Philadelphia 6, Pa.

Associates: Philadelphia Quartz Co. of Calif. Berkeley & Los Angeles, Calif., Tacoma, Wash.; National Silicates Limited, Toronto, Canada
Distributors in over 65 cities

PQ WORKS: ANDERSON IND. BALTIMORE, MD., BUFFALO, N. Y., CHESTER, PA., JEFFERSONVILLE, IND., KANSAS CITY, KANS., RAHWAY, N. J., ST. LOUIS, MO., UTICA, ILL.

Hayden Heads DCAT

J. David Hayden, eastern sales manager of R. P. Scherer Corp., has been elected 60th chair-



J. David Hayden

man of the Drug, Chemical & Allied Trades Section of the New York Board of Trade at DCAT's 66th annual meeting held at Pocono Manor, Pa., Sept. 27-29. Mr. Hayden succeeds Sydney N. Stokes, assistant to the executive vice-president, van Ameringen-Haebler, Inc., who was elected section representative to the board of directors.

Other officers elected by the DCAT include W. Boyd O'Connor, president, Ayerst Laboratories Division, American Home Products Corp., vice-chairman; Ralph A. Clark, vice-president, J. T. Baker Chemical Co., treasurer; James G. Flanagan, vice-president, S. B. Penick & Co., counsel; and Helen L. Booth, secretary.

In a speech before the convention, Mr. Stokes called for factual information towards science and scientific careers to offset the possibility of an inadequate supply of trained personnel in the future. He stated that "the attitude of the high school student towards science in general is not very encouraging and the opinions expressed by the students point out a tremendous lack of factual information."

Elected as members of the executive committee of the section (excluding officers) were:

Paul J. Cardinal, vice-president, Hoffmann-LaRoche, Inc.; John A. Cawley,

president, George W. Luft Co.; E. D. Bowes, New York manager, Kimble Glass Co.; Harrison S. Fraker, publisher, Topics Publishing Co.; Leon W. Miller, chemical sales manager, Barrett Division, Allied Chemical & Dye Corp.; Fred G. Singer, E. I. du Pont de Nemours, Inc.; William W. Huisking, Chas. L. Huisking & Co.; Harold F. Cummings, Vitamerica Corp.; Stephen F. Urban, E. R. Squibb & Son; William J. Schieffelin, III, Schieffelin & Co.; F. M. Schwemmer, White Laboratories, Inc.; James Day, Dow Chemical Co.; Griffin Crafts, J. W. Glass Co.; W. T. Halsted, Thos. Leeming & Co.; Louis E. Kalty, Progressive Drug Co.; George H. McGlynn, Magnus, Mahee & Reynard, Inc.; J. A. Singmaster, Jr., Monsanto Chemical Co.; and Charles E. Dutches, M.D., consultant to the drug and chemical industry.

★

Westwood Chemical Moves

Westwood Chemical Co., New York sales representatives for Synthetic Products Co. and Archer-Daniels-Midland Co., both of Cleveland, has moved its offices to larger quarters at 342 Madison Ave., New York 17, N. Y., it was announced recently.

★

Armour Appoints Graham

Armour and Co., Chicago, last month announced the appointment of Burton W. Graham as sales director of its chemical division. He succeeds J. M. Hoerner, recently named division general manager. Mr. Graham had served with the Davison division of W. R. Grace & Co., New York, since 1944 where he held positions of product sales manager, assistant general sales manager of industrial chemicals, director of technical service, and director of commercial chemical development.

Burton W. Graham



Columbia Advances Grant

The appointment of Charles E. Grant to the newly-created position of manager of solvent sales



Charles E. Grant

for Columbia-Southern Chemical Corp., Pittsburgh, was announced recently by Chris F. Bingham, vice-president of sales. Mr. Grant had served as manager of market development for chrome chemicals since joining Columbia-Southern in 1955.

In his new post, he will be responsible for the firm's sales of trichlorethylene, perchlorethylene, mono-chlorobenzene, ortho-dichlorobenzene and para-dichlorobenzene. He previously had been associated with Diamond Alkali Co., Cleveland.

★

Cos. Chems. Hear Light

Amos Light, research pharmacologist of Wellcome research laboratories, Burroughs Wellcome, Inc., Tuckahoe, N. Y., was the guest speaker at the monthly meeting of the New York chapter of the Society of Cosmetic Chemists held in the Metropolitan Room of the Brasserie restaurant, 5th Ave., and 43rd St., New York, on Sept. 26. Mr. Light's topic was "Peripheral Vascular and Absorptive Changes in the Aging Skin." He employed slides to demonstrate work done in his laboratory on penetration and absorption through the skin and discuss the future research in the field of peripheral circulation.

Were you to ask us...
 ... to duplicate a  **natural** odor
 ... or to create a **new**
 fragrance 
 ... or conversely, to  **mask**
 an odor
 We would gladly welcome
 the  **challenge**

Here are three solutions to your specialty
 perfuming problems.

HONEYSUCKLE \$1.50 per lb. • ROSE HYDROL \$2.50 per lb.
 MINT CONCENTRATE \$3.50 per lb.

The strong, clean fragrance of these new compounds
 will build greater acceptance for your products.



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In Canada . . . R. M. Ferguson & Company, 81 Dunedin Drive, Toronto

Schroeder to Harvard

Archer-Daniels-Midland Co., Minneapolis, Minn., recently announced that Burton W. Schroeder,



Burton W. Schroeder

assistant vice-president and assistant to the president, has been selected to attend the fall session of the advanced management program at Harvard University. The program, designed to give executives a broader understanding of management's function in business, began last month and will run through Dec. 7th. Mr. Schroeder was appointed assistant to the president last October. Prior to that he served as sales manager for vegetable fatty acids and industrial cereals.

★

Controllers Elect Four

Election of four directors of local controls of Controllers Institute of America, New York, were announced recently. Robert J. McGinley, associate manager of accounting and finance, overseas division, Procter & Gamble Co., Cincinnati, has been elected director of the local control in Cincinnati; Ralph W. Sauber, controller Rayette, Inc., St. Paul, has been named director of the local control in the twin cities of St. Paul and Minneapolis; William C. Watson, assistant treasurer Chesebrough-Pond's Inc., New York, and Robert B. Wright, controller Mennen Co., Morristown, N. J., have been elected director of local controls in these two cities, respectively.

Michel Data Sheet

"Cachalot" brand fatty alcohols are listed on a new data sheet published last month by M. Michel and Co., 90 Broad Street, New York 4. Selected grades from the firm's full line of C₁₂ to C₁₈ straight chain aliphatic alcohols are included.



Speaks on Oily Skin

A discussion of oily skin by Dr. Stephen Rothman, head of the dermatology department of the University of Chicago, was the highlight of the October meeting of the Chicago Chapter of the Society of Cosmetic Chemists. The title of Dr. Rothman's speech was "Nature and Management of Oily Skin."



McKeefery in New Post

The appointment of Raymond J. McKeefery as industrial sales manager of van Ameringen-Haebler, Inc., New York, was announced recently by Charles P. Walker, president. Mr. McKeefery has been a member of the firm's sales staff since 1952. He had previously served in a sales capacity with Sindar Corp., New York.

At the same time, it was announced that new equipment, including a modern liquefied gas manipulator, has been added to the aerosol research laboratory in New York. This is expected to enlarge the scope of the company's work in the pressurized packaged field.

Raymond J. McKeefery



From here



... to here



it's Shea all the way!

Shea phosphates BEGIN in Shea's own phosphate mines in mineral-rich Tennessee.

They END in *your* production line.

All of the operations in between are Shea-controlled — your assurance of undeviating quality . . . uninterrupted supply.

It's this *all-the-way control* that assures you of getting what you want, when you want it.

Sodium Tripolyphosphate
Tetrasodium Pyrophosphate
Disodium Phosphate
Trisodium Phosphate
Sodium Hexametaphosphate
Phosphoric Acid
Dicalcium Phosphate
Feed Grade
Phosphate Feed Solution



CHEMICAL CORPORATION

Jeffersonville, Indiana • New York 16, New York



Why Wyandotte Caustic Soda?

MANY OF TODAY'S formulators call on Wyandotte for their supply of caustic soda for several important reasons.

First of all, Wyandotte's anhydrous grades of caustic are "main-line" products, high in quality and product uniformity . . . insuring customer satisfaction with every drum. Rigid control in the processing means that you get the finest, commercially pure caustic.

Wyandotte makes several forms of particulate anhydrous caustic soda, including standard flake, 1/4-inch flake, granular crystal, and powder. All of these are packaged in metal drums, with wide head openings for safe, easy removal of the caustic.

We give prompt, on-schedule delivery, and customer consultation. Our Technical Service Department is available to assist you with your use of Wyandotte Caustic Soda—to put our experience and technical skills to work for you.

You can order Wyandotte caustic either direct, or through our distributors. But whichever way you prefer to buy, you can get the same helpful, technical assistance with chemical problems which may be troubling you.

Contact your Wyandotte representative or distributor today, or write us direct. *Wyandotte Chemicals Corporation, Dept. SCS-10, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS
MICHIGAN ALKALI DIVISION



BLEACHING AGENTS • CARBOXYMETHYLCELLULOSE • CAUSTIC SODA • CALCIUM CARBONATE
CALCIUM CHLORIDE • CHLORINE • DETERGENTS (NONIONIC AND ANIONIC) • EMULSIFYING
AGENTS • SODA ASH • SODIUM BICARBONATE • SOLVENTS (CHLORINATED) • WATER
SOFTENERS • WETTING AGENTS



R. M. Dhonau

Emery Advances Two

Two appointments to the staff of the development and service department of Emery Industries, Inc., Cincinnati, were announced recently by W. T. Meinert, department director. Both men, Robert H. Dhonau and Arthur R. McDermott, will be concerned with the development of all new Emery products as well as technical service for the fatty acid and organic sales departments.

Previously Mr. McDermott handled the sale of Emery's industrial chemicals in Chicago and the southwestern states. He holds a B.S. degree in chemical engineering from the Missouri School of Mines and Metallurgy. Mr. Dhonau, a member of the company's applications research group for ten years, is a graduate of the University of Cincinnati.

A. R. McDermott



Two changes in the sales division of Felton Chemical Co., Brooklyn, N. Y., were announced



A. S. Mass



N. M. Showe

recently by A. Dingfelder, sales manager. A. Stanley Maas has been transferred from the firm's Cleveland office to Chicago, while Noah M. Showe has been appointed to the field staff of the Detroit branch. Mr. Maas, who has been with Felton for 22 years in various sales capacities, will cover western Michigan, Indiana, and Illinois. Mr. Showe, who joined the firm 18 months ago and has since undergone sales training in New York, will cover eastern Michigan, Ohio and West Virginia.

The appointment of Paul H. McConnell as district manager of the consumer products division in New York, was announced recently by Monsanto Chemical Co., St. Louis. For the past six years, Mr. McConnell had been district sales manager at the firm's San Francisco office. He succeeds Edward Heath who has been named product manager for "All."

Paul H. McConnell



W W



**Which for you--
74% liquid caustic
...or 50%?**

DETERMINING your own particular advantages in choosing between 50% and 74% liquid caustic soda, is often a difficult job. Much depends on such variable factors as freight rates, presently available equipment, cost of new equipment, and quantities of liquid caustic needed.

With 74% solutions, there are definite freight savings — since less water must be shipped. However, the cost of such concentration cancels out part of the freight savings.

A tank car of 74% material, diluted to 50%, results in some 70% more total liquid than a tank car of 50% caustic soda . . . this means that more storage space must be supplied. Many caustic users can readily adapt their present facilities at a relatively low cost, to provide additional dilution equipment and required storage space.

Thus, a careful study of all factors involved is needed to find the best concentration meeting a company's individual requirements.

And you can get help in determining these advantages by calling in a Wyandotte representative . . . he will be glad to figure out which concentration would be best for you.


Remember that Wyandotte makes quality grades of liquid caustic, and gives prompt service and delivery. Our salesmen are experienced people, capable of giving you help with your liquid caustic problems. Call in your Wyandotte man, today. *Wyandotte Chemicals Corp., Dept. SCS-10, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS



MICHIGAN ALKALI DIVISION • HEADQUARTERS FOR ALKALIES

W W W W W W W W W W W W W W W W W



*Cosmetic Elegance
Gives Shampoo*

SALES APPEAL

Du Pont DUPONOL* EP gives your clear
liquid shampoo true cosmetic elegance

COSMETIC ELEGANCE—This fine detergent gives your formulation a clear, pale golden color that has the appearance of a fine cosmetic product. And it won't fade or discolor on display.

COSMETIC ELEGANCE PLUS UTILITY—"DUPONOL" EP has hard-working advantages, too. It's laboratory-tested and controlled to give you uniform results, batch after batch. You get greater response, so less thickener is needed; yet your shampoo will retain its important foaming and cleansing action. You'll save time, effort and money, too.

COSMETIC ELEGANCE THAT SELLS—You'll make a *better* clear liquid shampoo by formulating with Du Pont's "DUPONOL" EP; and that means the ladies will come back for it, time after time. Our bulletins, containing typical formulas, may be of help. Send to us for them: E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Dyes and Chemicals Div., Wilmington 98, Del.

DU PONT *Duponol* EP

BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY



REG. U.S. PAT. OFF.

*REG. U.S. PAT. OFF.

Pharntolia[®]*

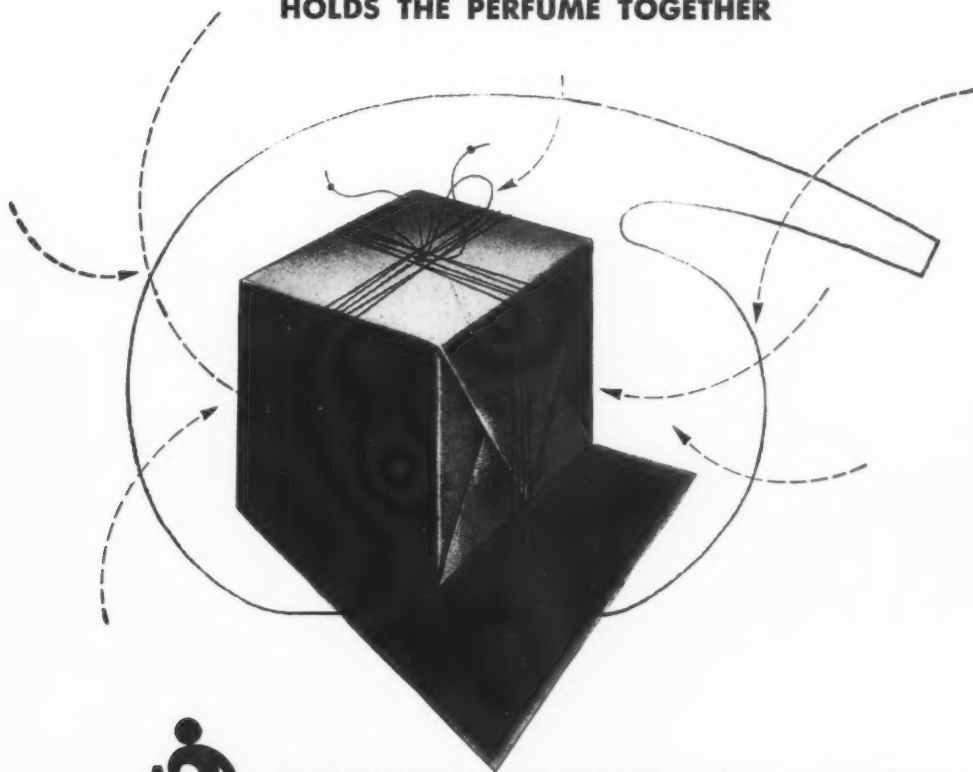
**THE
new
aromatic chemical
musk-tonkin type
lasting, economical**

Useful addition to present standard fixatives

Does not discolor perfumes, creams, soaps, and
other cosmetic preparations

Like a string around a package, it...

HOLDS THE PERFUME TOGETHER



Polak's Frutal Works, Inc., Middletown, New York

*Domestic and Foreign Patents applied for.

PILOT

HD-90

**CONCENTRATED
QUALITY
CUTS COSTS**

**MAKES
LIQUID DETERGENTS
EASILY**

QUICKER AND BETTER TO
PRODUCE LIQUID DETERGENTS
FROM PILOT HD-90 FLAKE

because Pilot HD-90
REQUIRES NO STORAGE TANKS
IS READILY SOLUBLE
MAKES CLEAR SOLUTIONS
HAS HIGH SUDSING AND EMULSIFYING
HAS EXCELLENT PERFUMABILITY—ODORLESS BASE
REQUIRES LESS LABOR AND INVESTMENT
IS AVAILABLE IN ANY QUANTITY

because it's

**COLD PROCESSED
HIGH ACTIVE ALKYL ARYL SULFONATE**
90.0% minimum active drum dried flake

Only cold processing at temperatures below freezing can produce concentrated uniform sulfonation! Every micelle produced in solution from Pilot HD-90 is homogeneously effective for such use as household sudsers, industrial detergents and scouring powders. Cold processing eliminates undesirable side reactions, hydrocarbon odors, and any rearrangement of the molecular structure. Pilot HD-90's high quality in the making and mixing of dry products is equally applicable to the manufacture of liquid detergents. Pilot HD-90's concentrated and sulfate-free properties eliminate filtering; give liquids the highest sudsing and cleaning powers obtainable. Write for formulas and samples. Only Pilot HD-90 Detergent features this premium quality at competitive prices!

Packed in polyethylene lined fibre drums and in 5-ply paper bags.



PILOT Chemical Co. Manufacturers of
215 WEST 7th STREET • LOS ANGELES 14, CALIFORNIA

Sulfonic Acids
Dodecyl Benzene Sulfonates
Sodium Toluene Sulfonate

BETTER DISTRIBUTION METHODS



14 SEPARATE REQUISITIONS for assorted chemicals come in to New York office of national manufacturer. Purchasing agent has single order made out and calls nearby Merchants office.



ENTIRE ORDER IS PUT ON TELETYPE to Merchants offices and warehouses across the country. Each of Merchants' other offices is similarly equipped to function as central ordering point.



DELIVERIES GO OUT IMMEDIATELY to all 14 plants. Each plant has its order filled from nearby Merchants warehouse; short haul delivery saves time and shipping costs.



SINGLE INVOICE FROM MERCHANTS covers all 14 shipments. By calling Merchants, this purchasing agent supplies the chemical needs of all his plants quickly and economically from a single, reliable source!

NATIONAL MANUFACTURER MAKES ONE CALL TO MERCHANTS, GETS LOCAL DELIVERY TO 14 PLANTS ACROSS THE COUNTRY!

Each Merchants office is geared to supply fast, efficient delivery of industrial chemicals from warehouses throughout the country. Each Merchants office provides all the advantages of nationwide service with all the economy of local delivery. A single call to Merchants saves you

time, reduces your shipping costs, and simplifies to a considerable extent your order and invoice paperwork. Products include acids, alkalis, fungicides, surfactants, chlorinated solvents, emulsifiers, laundry compounds, soaps, dry ice and chemical specialties.



MERCHANTS CHEMICAL COMPANY, INC.

60 East 42nd Street, New York 17, N. Y.

SALES OFFICES AND WAREHOUSES: Chicago • Cincinnati • Denver • Louisville • Milwaukee • Minneapolis • New York • Omaha

STOCK POINTS: Albuquerque, N. M. • Erwin, Tenn. • S. Norwalk, Conn. • Columbus, Ohio



REGULAR FLAKE



FINE FLAKE



CRYSTAL FLAKE

Flakes shown 1/2 actual size

LOOK... NO WASTE

**Every ounce in the drum is usable
when you buy Hooker caustic soda flakes**

Give your product the advantages of these clean Hooker flakes—made just the right size and thickness by a new flaking-screening operation.

These caustic soda flakes are uniformly sized when you get them... and they stay that way until you use them. You get only the flake size you want, with every drum you buy.

For samples write or phone the nearest Hooker office. Or talk with your Hooker jobber. He can help you decide which size is your best buy, and make certain you always have a supply of the size or sizes you want.

You can also get Hooker caustic in powdered form; as a solid; and in 50% and 73% solutions—in a grade to meet your requirements.



FLAKES STAY DRY in this new 400-lb. drum. The 14-inch lid stays tight in transit and storage, held securely by six lugs to keep caustic at full strength for your process. You can also get Hooker flake caustic in reusable full open-head drums, at slight additional charge.

FOR FAST SERVICE, phone: New York ... MUrray Hill 2-2500
Chicago ... CEntral 6-1311
Niagara Falls ... 6655

HOOKER ELECTROCHEMICAL COMPANY

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6-1873



GENERAL MAINTENANCE
CLEANERS



DISHWASHING COMPOUNDS



DAIRY CLEANERS



BUBBLE BATHS

If you make
any of these...



LAUNDRY DETERGENTS



RUG, UPHOLSTERY CLEANERS



CAR WASHES

you'll get

BETTER RESULTS when
you formulate with

Orvus AB Granules offer
6 important advantages:

- ✓ Superior blending properties for smoother formulations
- ✓ Strong granular structure minimizes breakdown and dustiness
- ✓ High detergency
- ✓ Readily soluble in hot or cold water
- ✓ Exceptional sudsing and wetting properties
- ✓ Superior dispersing and emulsifying properties

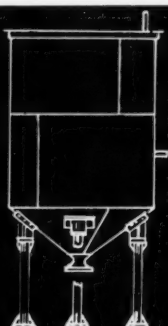


One sure way to boost product quality *and profits*: start formulating with Orvus AB Granules! No matter what you make—from bubble baths to rug cleaners—you'll find this 40% active type alkyl aryl sulphonate will help you make it better! For more information on this top-quality synthetic detergent, drop a postcard to . . .

Procter & Gamble

Bulk Soap Sales Department, P.O. Box 599, Cincinnati 1, Ohio

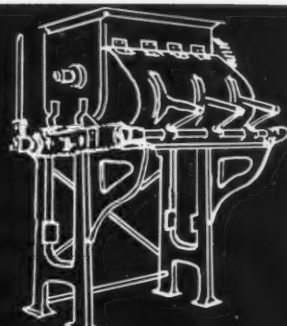
America's largest manufacturers of top-quality soaps and synthetic detergents



KETTLES



CRUTCHERS



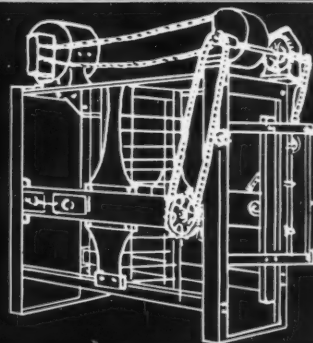
AMALGAMATORS

Making Good Soap **BETTER**, for 114 Years

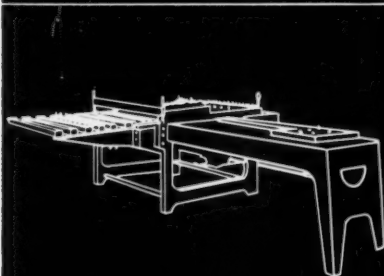
114 years ago Houchin started producing soap making machines.

Practically all basic soap making machinery today is derived from original Houchin inventions.

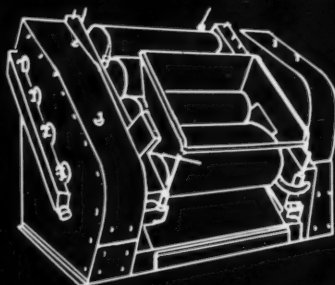
Look to Houchin for further revolutionary improvements.



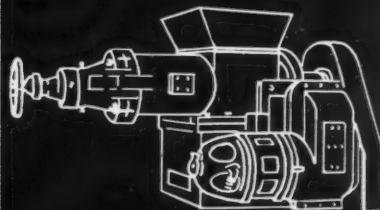
SLABBERS



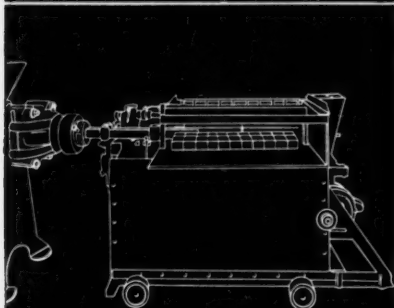
LAUNDRY SOAP CUTTERS



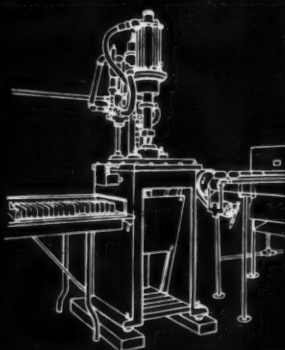
MILLS WITH GRANITE OR CHILLED
IRON ROLLS



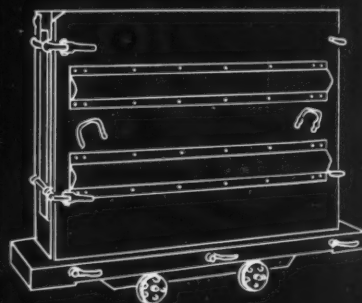
PLODDERS



TOILET SOAP CUTTERS



PRESSES—FOOT OR AIR OPERATED



SOAP FRAMES

HOUCHIN MACHINERY CO., INC. HAWTHORNE,
NEW JERSEY, U. S. A.

Solvent-Detergent Combination Products

COMBINATIONS of solvents with synthetic detergents can clean better than detergents alone when washing heavily soiled clothing, metals, woollens and other textiles. Such combinations should be uniformly clear products, which form either solutions or emulsions in the wash liquor, depending on the user's requirements.

If solution in the wash liquor is desired the detergent must act as solubilizer on the solvent which is water insoluble per se. Experiments in this field were carried out with tall oil, which has a high terpene alcohol content and, owing to its polar characteristics, lends itself well to solubilization by syndets. "Teepol", a secondary alkyl sulfate made by Shell in England, was the detergent used. Experiments were begun using 34 percent active "Teepol", which contained approximately 60 percent water. The aim of the experiments was a clear product, soluble in hard and soft water. This was complicated by the high water content of the detergent and the presence of large quantities of tall oil. The following formula satisfied all these requirements: "Teepol" (34 percent), 100 parts; tall oil, 50 parts; isopropyl alcohol, 10 parts; and water, 10 parts.

A clear gel can be made by modifying the above combination thus: "Teepol", 100 parts; tall oil, 25 parts; and water, 20 parts. The increased water content accounts for the gel consistency. An optimum water content can be established in the presence of which the gel exhibits maximum firmness. If this optimum is exceeded, the gel liquefies.

This product also is completely soluble regardless of water hardness.

Tall Oil Synergistic

THESE experiments showed tall oil to exert a strong synergistic effect upon the wetting speed of the secondary fatty alcohol sulfonate. The Draves test shows the wetting speed of "Teepol", 0.1 percent, (calculated as pure active material, about 0.3 percent of 34 percent "Teepol") to be 14 to 17 seconds. Admixture of 25 parts tall oil to 100 parts of "Teepol" in 0.1 active solution cuts the wetting time to between three and four seconds. This result proves unequivocally the synergistic effect of tall oil on the wetting properties of secondary fatty alcohol sulfonates. Tall oil in combination with soap and turkey red oil has long been used as an auxiliary in textile processing in the United States. The possibility of combining tall oil with a low price synthetic detergent such as "Teepol" and achieving a special boosting effect offers obvious and considerable advantages.

Solvent Emulsions

IN the products described so far, solubilization of the tall oil produces this special synergistic effect. However, in some instances an emulsion of the solvent in the wash

liquor may be more desirable than a solution. Dispersed particles of the emulsified solvent are still capable of functioning as independent solvent units. In aqueous phase they may be more effective degreasing agents than a solvent in solution.

From a syndet/solvent emulsion the solvent is selectively adsorbed onto the textile fiber, especially in the case of wool. Visual proof of this can be obtained by washing wool with a solvent/syndet emulsion. The originally milky emulsion becomes clear after about 10 minutes' contact with the wool in an ordinary drum washer. The solvent is selectively adsorbed by the fiber, where it softens and dilutes obstinate and greasy soil. A second washing cycle with a strong syndet solution (no solvent) removes the solvent which now carries a heavy load of greasy soil.

No matter whether solubilization or emulsification of the solvent in the wash liquor is desired, the combined syndet/solvent starting product must be perfectly clear and homogeneous. No separation or settling out is permissible. "Shake before use" may be a satisfactory use direction for a medicine bottle or stain remover, but not for a substance supplied in sizeable quantities. To make a stable uniform starting product from ingre-

Combinations of solvents and detergents for washing heavily soiled clothes, metal, woollens and other textiles do a better job than using synthetic detergents alone



MECCANICHE MODERNE

CORSO SEMPIONE, 51

BUSTO ARSIZIO (ITALY)

CHARACTERISTICS OF THE "PISONI SAIX" PLANT

It is the only plant on the market which continuously cools soap with simultaneous extrusion of a continuous bar maintaining unchanged total fatty acids content as determined before cooling.

It comprises one special cooling plodder which, working without any endless screw, can extrude soaps made with fats having a high or low melting point even if containing high percentages of water or builders, namely:

- Pure soaps having 62-63% T.F.M.;
- Soaps having T.F.M. from 35% to 62-63%;
- Soaps having T.F.M. 62-63% with 25-30% rosin;
- Soaps having 56% T.F.M. with 25-30% rosin, filled with silicate or soda carbonate;
- Mixing soaps having 100% coconut oil;
- Olive oil foots soaps;
- Pure peanut oil soaps;
- Soaps with Phenol;
- Dry, pure or filled, soaps having T.F.M. contents from 35 to 72-74%;
- Transparent laundry or toilet soaps having 72-74% T.F.M.

Savings: Steam, 100% — Labor, 70% — water, 50% — power, 50%.

A fully automatic and continuous operation — only one workman to run the plant—small space requirements—absolutely no scraps—automatic perfuming.

By our process foaming capacity is highly increased—cakes undergo no deformation during storage neither moisten package.

These plants are manufactured for the following output capacities: 0.5 — 1 — 2 — 3 tons per hour. We also manufacture:

Complete plants for pilld toilet soaps — chips — synthetic detergents in beads form.

Free and without any obligation, ask for tenders — references — catalogues — soap samples — plants inspection.

SOAPS & GLYCERINE

DAVID THOM & CO. LTD

WHIT LANE WORKS
SALFORD: 6

TELEPHONE PENGLTON 1838 1839
TELEGRAM THOM MANCHESTER

THIS COMMUNICATION IS FROM

Office

By JTT/MN.

14th July, 1955.

Messrs. Meccaniche Moderne,
Casella Postale 180,
BUSTO ARSIZIO,
Italy.

Dear Sirs,

We are very pleased to inform you that you SAIX 2C Cooling Plodder is working most satisfactorily.

We are now utilising the machine for all our Bar Soap production which includes a wide variety of soaps all varying qualities and formulations.

We have found from experience that these soaps are far superior to soaps made by the older conventional methods. They have better washing and lathering properties and also do not distort or twist in storage.

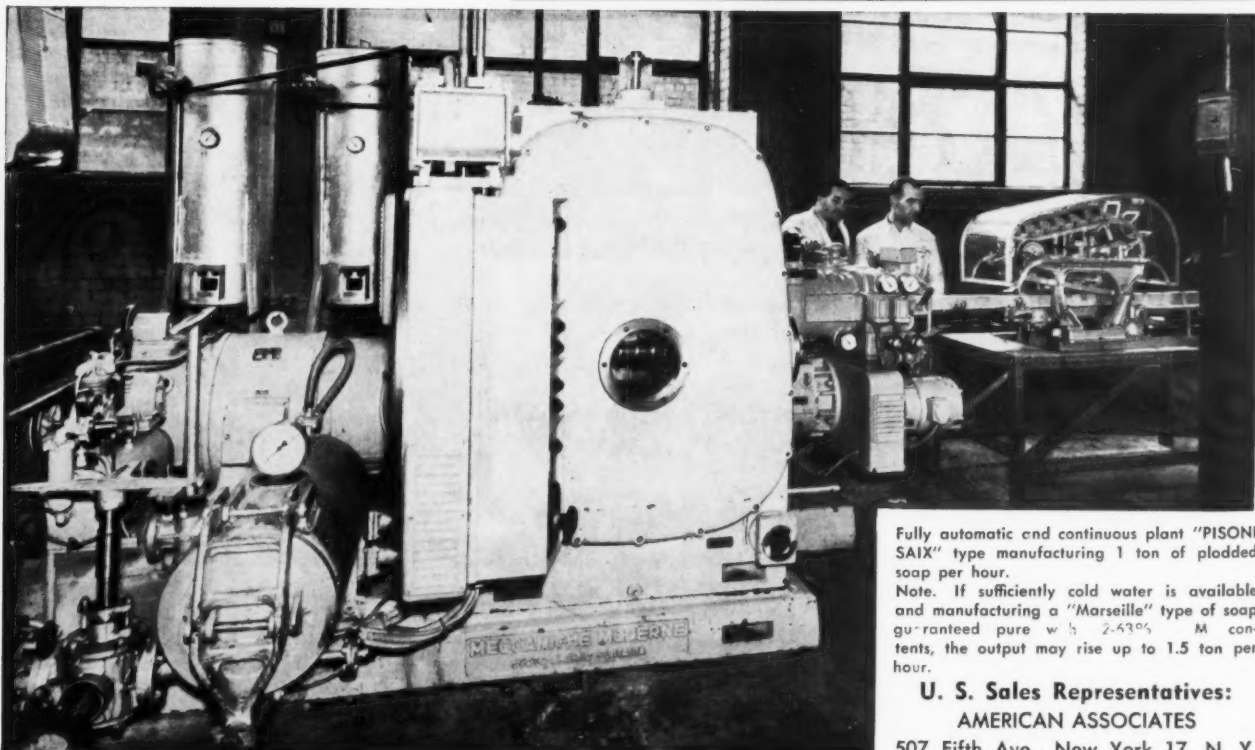
The savings in labour and scrap soap have far exceeded our expectations. The guaranteed output has been maintained in practice and the power and water consumption are well within your specifications.

In our opinion this machine is the most revolutionary piece of machinery introduced in the soap making industry in recent years. We can assure you of our complete satisfaction with its performance in all respects, and also we much appreciate the helpful service and advice which has been offered by you at every stage during the erection and trial periods.

We have every confidence in recommending this machine to any producer of household soap.

Yours faithfully,

John T. Terleski
.....
Dr. J. T. Terleski. (Director).



Fully automatic and continuous plant "PISONI SAIX" type manufacturing 1 ton of plodded soap per hour.

Note. If sufficiently cold water is available and manufacturing a "Marseille" type of soap guaranteed pure with 2-3% M contents, the output may rise up to 1.5 ton per hour.

U. S. Sales Representatives:
AMERICAN ASSOCIATES
507 Fifth Ave., New York 17, N. Y.

dients which are at least in part intended for ultimate emulsification, is obviously very difficult. A number of combinations were tried which incorporate non-polar solvents with tall oil and "Teepol", both of which contain polar OH groups. Strict adherence to established proportions in formulating this type product was found of great importance. The following components were found to yield a clear mixture: "Teepol", 100 parts; tall oil, 50 parts; mineral spirits, 25 parts; isopropyl alcohol, 10 parts; and water, 10 parts.

Aromatic non-polar solvents can be incorporated in such formulations more easily and in larger proportions than can paraffinic non-polar solvents such as mineral spirits. A uniform water white product is formed by: "Teepol", 100 parts; tall oil, 50 parts; and xylol, 100 parts. Both the mineral spirits and the xylol combination form stable emulsions in water. However, if the proportion of xylol is significantly increased the solvent/syndet mixture first becomes cloudy and then separates. Solubilization of the solvent in the detergent solution prior to use and dilution in the wash liquor is of paramount importance, regardless of whether the ultimate purpose is solubilization or emulsification of the solvent.

Sulfonation Described

ALKYL aryl sulfonates derived from dodecylbenzene today account for more than half of all detergents marketed in the United States. A similar trend exists in Europe. Manufacturers supplying this type of syndet in concentrated form usually also market dodecylbenzene for sulfonation. This enables the more ambitious manufacturer to produce his own individual type of detergent from the basic material. Sulfonation will be illustrated here by just one example. Details of sulfonation techniques are available from the producers of alkyl benzenes.

Alkyl benzene sulfonic acid of lowest possible free sulfuric acid content is the most favorable

starting material for sulfonation and ultimate manufacture of solvent/syndets. Reaction of alkyl benzene with oleum (20 to 23 percent free SO_3) is the simplest sulfonation process: 100 parts of alkyl benzene are sulfonated with 105 to 110 parts of oleum in a sulfonation vessel of stainless steel or steel protected by glass or porcelain lined. Two thirds of the oleum is added at a temperature not exceeding 50° ; for the remainder, the temperature may rise to 65° without causing discoloration of the sulfonate.

Addition of the oleum should be slow enough to occupy a period of one to one and a half hours and must be accompanied by efficient cooling. After all the oleum has been added the sulfonation mixture should be stirred for another hour to make sulfonation as complete as possible, i.e., down to one percent of unsulfonated matter calculated on 100 percent active detergent.

The next problem is to maintain the acid sulfonates as free from free sulfuric acid as possible. This is achieved by vigorously stirring 20 to 21 parts ground ice into the sulfonation mixture of 100 parts alkyl benzene and 105 to 110 parts oleum. Efficient cooling must be maintained to keep the temperature in the sulfonator below 50° . Then the sulfonation mixture is transferred to a settling tank, preferably lead lined, and is left to settle for a period of five to eight hours. Usually this process yields 80 parts of 80 percent waste acid and 150 parts alkyl benzene sulfonic acid or very low free acid content.

Neutralization and Yield

ACTIVE detergent potential of the sulfonic acid thus obtained may be calculated as the amount of alkyl benzene sodium sulfonate derived by neutralization with soda lye. Neutralization of 150 parts sulfonic acid with about 24 to 25.5 parts of sodium hydroxide yields 135 parts of alkyl benzene sodium sulfonate. Hence, correct sulfonation of 100 parts alkylben-

zene yields 135 parts active detergent via 150 parts sulfonic acid. This means 90 percent active material from washed sulfonic acid neutralized with soda lye. Neutralization with ethanalamines yields different proportions.

Where neutralization with organic bases is desired, 100 parts of washed sulfonic acid require: 55 to 60 parts triethanolamine or 41 to 42 parts diethanolamine or 24 to 25 parts monoethanolamine.

Because neutralization with ethanalamines increases the molecular weight of the neutralized sulfonate, 100 parts of washed sulfonic acid yield 140 parts of active detergent with triethanolamine, 125 parts with diethanolamine, and 110 parts with monoethanolamine. However, the above figures are only approximations, because an organic builder which might also be regarded as active material is formed by the originally present free sulfuric acid which was not bound to the alkyl benzene and which now reacts with the ethanalamines.

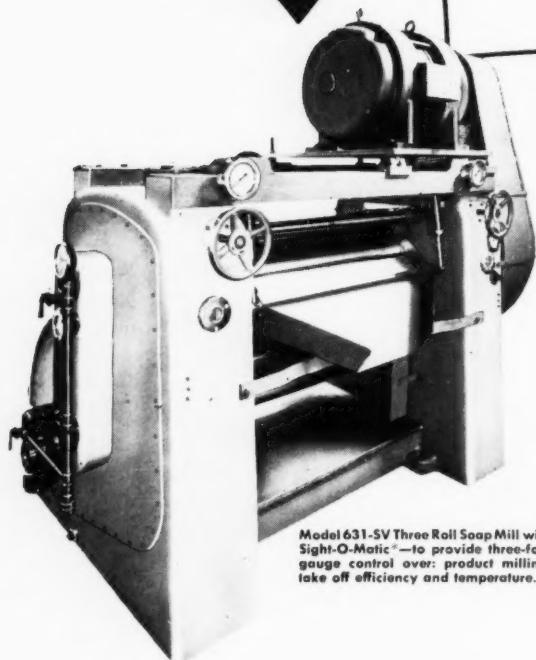
In some countries sulfonation with sulfuric acid or with an oleum/sulfuric acid mixture may be more economical than with oleum alone. For this process higher proportions of acid are required. For details the reader is referred to alkyl benzene producers.

Start from Sulfonic

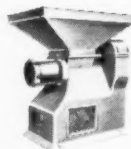
SOMETIMES it is more practical to purchase finished sulfonic acid from a sulfonating plant and use it for starting material to make solvent/syndet combinations. In an example, 50 parts of sulfonic acid are dissolved in 50 parts of xylol, and then neutralized with about 25 to 26 parts of soda lye (40°Be). An aqueous sample should not react red with methyl orange and should not give more than a very weak pink with phenolphthalein. This means neutralization should be checked and the pH should be between 6 and 8.5. Finally, 10 parts of isopropyl alcohol is added. The resulting product forms a clear solution in soft water. In very hard water (over 15 degrees)

LEHMANN MACHINES

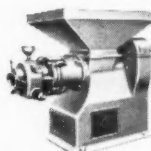
... Engineered to
YOUR
Soap Finishing Needs
PRESENT and FUTURE



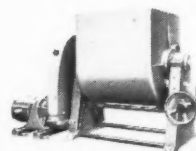
Model 631-SV Three Roll Soap Mill with Sight-O-Matic®—to provide three-fold gauge control over: product milling, take off efficiency and temperature.



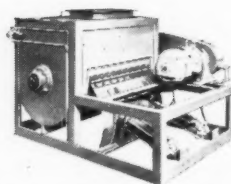
Model 310-P Preliminary Plodder



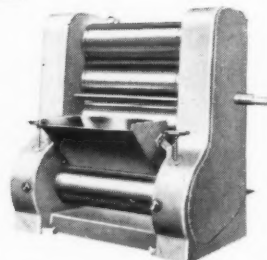
Model 310-F Finishing Plodder



Model 40 G-Y Tilting Type Amalgamator



Model 40 G-B Bottom Dump Amalgamator



Model 912-SA Five Roll Finishing Mill

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clouding occurs which is too slight to have any practical significance.

This product goes into clear solution in most polar and aromatic solvents. In non-polar aliphatic solvents it forms solutions which are not completely water clear. Solvent dilutions at ratios of 1:5 to 1:10 give milky solvent emulsions in further aqueous dilution, a fact that holds practical significance for metal and textile treating applications.

In the above recipe, xylol may be replaced by mineral spirits or kerosene, or chlorinated solvents such as trichlorethylene, carbon tetrachloride, etc., may be used. The sulfonic acid can be neutralized with organic amines instead of caustic lye, as described above for the soluble type products. Neutralization with ethanolamines or with a mixture of amines and alkalis produces the desired clear and uniform product more easily than neutralization with lye alone.

Neutralization of the detergent in diluted form is preferable for a number of reasons. It is more convenient to formulate the syndet/solvent combination in a one step process. Furthermore, in the neutralization of the undiluted sulfonic acid pastes of heavy viscosity are formed, high reaction temperatures released, and cooling greatly complicated by the paste consistency of the reaction mass. If the detergent has been previously diluted with the solvent, the reaction mass is liquid and easily cooled.

Products of this type are effective in the laundering of heavily soiled clothing, as textile auxiliaries, especially where a degreasing effect is desired, and in the treatment of metals.

The solvent may be varied according to intended end use. Formulations with chlorinated solvents are very suitable for steam laundries, where the odor of aromatic solvents, such as xylol, is a distinct disadvantage. For textile auxiliaries, hydroaromatics, such as cyclohexanol and methylcyclohexanol, are particularly suitable owing to the presence of an OH group in the

molecule endowing these solvents with polar characteristics.

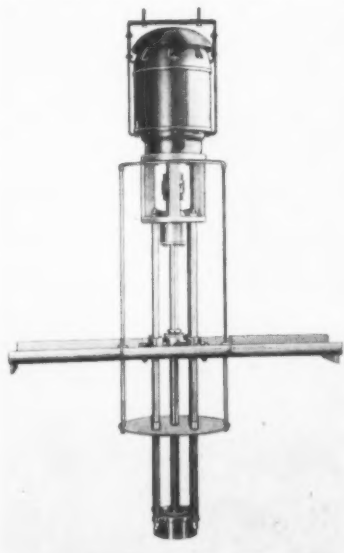
Acid solvent/syndet combinations can also be made by simply dissolving alkyl benzene sulfonic acid in a solvent. For instance, a thin liquid forming an almost clear solution in water is obtained by diluting 100 parts sulfonic acid in 100 parts of mineral spirits, benzene, xylol, or mixtures thereof. Pure sulfonic acid is not easily soluble in water, whereas sulfonic acid/solvent combinations are instantly and readily water soluble. Such acid products are useful in metal degreasing, sometimes for pretreatment before pickling, and in some instances for a one-operation pickling-degreasing process. Acid syndet solutions are useful al-

New Gifford-Wood Mixer

A high-speed, high shear homogenizer-mixer, which is said to assure fast and thorough blending, has been introduced by Gifford-Wood Co., Hudson, N. Y., it was announced recently. The machine is designed to minimize the entry of excessive air and the formation of air vortex in the blending operation, permitting the formation of more stable emulsions.

Called the "Eppenbach

A typical Eppenbach Homo-Mixer, this production model 5-H is driven by a 10 hp. motor. Similar models are available in a wide range of laboratory and production models, with capacities ranging from 1/4 to 2,000 gallons per mixing cycle.



so in certain textile processes, such as wool carbonization and dyeing in acid baths.

Nonionic detergents may also be incorporated in syndet/solvent combinations. Usually nonionics are soluble in these solvents, particularly in aromatics, without further processing. This fact is utilized in the manufacture of insecticide concentrates formulated with nonionic emulsifiers. But nonionics usually are more costly than anionics such as the sulfonates here described. However mixtures of sulfonates with nonionics have proved themselves practical in such formulations. A. Davidsohn, Haifa, in *Seifen - Oele - Fette - Wachse*, 1956, Nos. 16 and 17, pp. 461 and 462; 487 and 488.

Homo-Mixer," it can be utilized for blending and homogenizing dispersions, emulsions, pastes or any fluid or semi-fluid material.

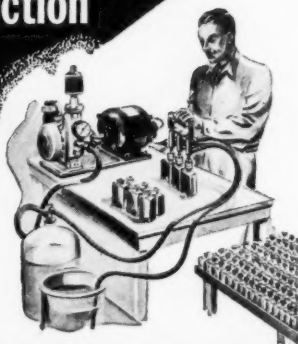
The "Homo-Mixer" utilizes a rotor-stator mechanism that draws material only from the bottom of the vessel in which it is contained, thus eliminating vortex and surface boil. An adjustable deflector plate, positioned above the mixing element, directs the material back down to the mixing area and keeps to a minimum the introduction of excessive air into the mixture. These features increase the stability of the finished blend and reduce formation of undesirable side reactions.

The homogenizer is powered by a motor, which is coupled to a shaft terminating in a turbine, or rotor. This rotates in an enclosed housing, or stator, to form the homogenizing head. By operating at high speeds (3,500 to 8,000 rpm), a pressure differential is maintained between the bottom of the turbine and the surface of the material being processed. Unrefined material is continuously drawn from the bottom of the mixing container and forced to pass through restricted openings in the homogenizing head, which shears the material and breaks it down in size.

Since the turbine also acts as

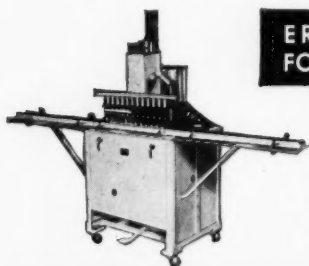
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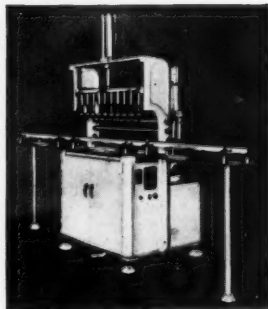


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- Silicate of potash
- Trisodium phosphate
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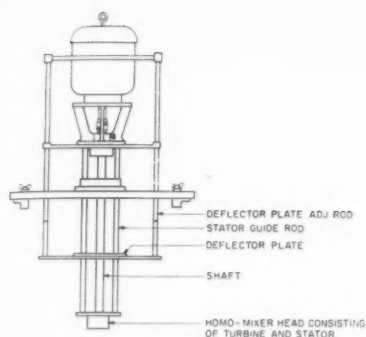
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SOAP and CHEMICAL SPECIALTIES



Drawing shows main elements of G-W's Eppenbach Homo-Mixer.

a pump, material is discharged upward after it passes through the homogenizing zone. The adjustable baffle plate then deflects this rising current towards the tank sides, where it moves back down into the mixing area for a repetition of the cycle.

The homogenizer is available either as a portable or stationary unit and does not require a high liquid head or specific mounting angle. Material can be processed at a height just sufficient to cover the mixing head. All contact parts are stainless steel, accessible for maintenance, and the unit can be self-cleaned by being operated in a suitable solvent or soap and water mixture. Both laboratory and production models of the mixer have capacities ranging from 1/4 to 2,000 gallons.

New Drum Pump

A new, improved lightweight drum pump, designed to speed mixing of light fluids, was recently introduced by Gray, Inc., Minneapolis, Minn.



The pump, called "Direct Drum," can handle light fluids normally received in 55-gallon drums and will dispense up to 23-gallons per minute of most light liquids. Through use of a three-quarter inch hose and a gasoline-type valve at the end of the hose, the pump can be used to transfer fluids into vats, mixing tanks, etc.

Operating on air pressure of 35 to 200 p.s.i., it can be used in hazardous places without danger. Literature can be obtained from

the company, 1041 Sibley St.

New pH Meter

A new, pocket-size pH meter, designed to measure acidity and alkalinity, was recently introduced by the scientific instruments division, Beckman Instrument Co., Fullerton, Calif.

The new instrument is battery operated and has a range from 2 to 12 pH. It is equipped with a reference dial for use in standardizing measurements.



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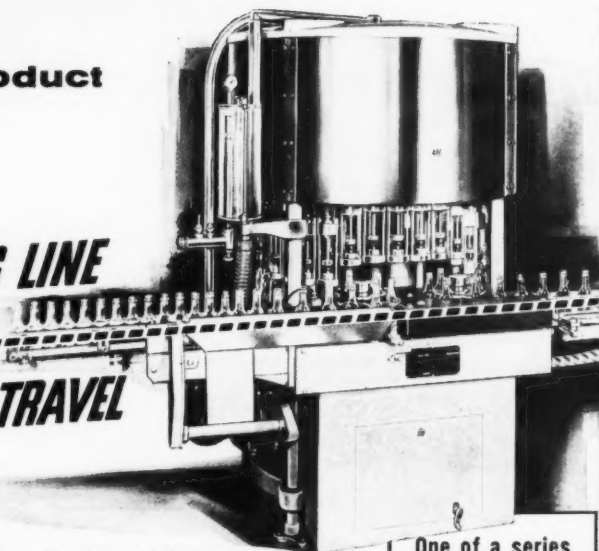
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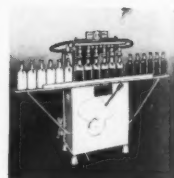
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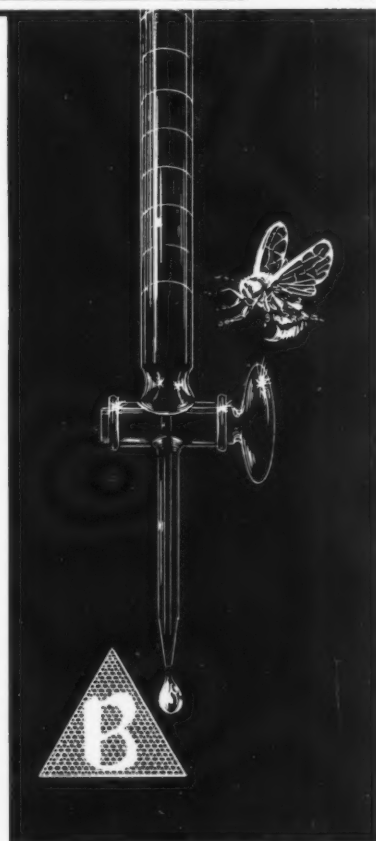
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NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine, Mac Nair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be \$1.00 per copy.

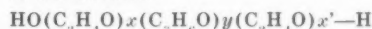
No. 2,754,305. Non-Yellowing Triethanolamine Soaps, patented by Werner Wolff, Neuotting, Upper Bavaria, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruening, Frankfurt am Main-Hoechst, Germany. A process for the manufacture of non-yellowing triethanolamine soaps is described which comprises introducing sulphur dioxide under slight heating into triethanolamine and then neutralizing the so-modified triethanolamine with a fatty acid.

No. 2,760,969. Alkali Fusion of Halogenated Fatty Acids, patented by Cheves T. Walling, Upper Montclair, N. J., assignor to Lever Brothers Co., New York. The patent teaches a process which comprises halogenating a fatty acid having from 12 to 24 carbon atoms, fusing the resultant halogenated fatty acid with at least two moles of caustic alkali for each atom of halogen in the halogenated fatty acid to effect degradation of the halogenated fatty acid, and recovering saturated fatty acid of shorter chain length than the starting acid. The patent also covers a process according to claim 1, outlined above, in which the fusion with caustic alkali is carried out at a temperature of at least 275°C.

No. 2,758,092. Detergent Compositions, patented by Al G. Peck, Normandy, Mo., assignor to Peck's Products Co., St. Louis, Mo. The method is described of increasing the stability and volume of suds of an alkyl aryl sulfonate-containing aqueous detergent solution in the presence of grease soil, comprising adding to an alkyl aryl sulfonate selected from the group consisting of the triethanolamine salt of dodecyl benzene sulfonic acid, approximately 10 percent to 50 percent by weight with respect to said sulfonate of an alkali metal N-oleoyl-N-methyl taurate.

No. 2,759,869. Germicidal Iodine Preparations, patented by Melville G. Sutton, Kew Garden Hills, N. Y., and Martin Reynolds, Drexel Hill, Pa., assignors to West Laboratories, Inc., Long Island City, N.Y. A germicidal

composition is covered comprising a nonionic carrier-iodine complex in the form of a solution of iodine with the nonionic carrier wherein a portion of the total iodine is chemically bound to said carrier and the major portion of the total iodine is loosely bound to said carrier and titratable as free iodine, said carrier being a compound of the formula



where y equals at least 15 and $(\text{C}_2\text{H}_4\text{O})_x + x'$ equals 20 to 90 percent of the total weight of said compound, and the total iodine present in said complex being within a range having as a lower limit the amount to provide a germicidally effective quantity of loosely bound titratable iodine and as an upper limit about 28 percent by weight of said complex.

No. 2,758,977. Detergent Composition and Method of Producing Same, patented by Cecil M. Knowles, Plainfield, N. J., and Jackson J. Ayo, Jr., Elizabeth, N. J., assignors to General Aniline & Film Corp., New York. The patent teaches the method of producing a clear fluid concentrated solution of the ammonium salt of an alkyl phenol polyglycol ether sulfate which comprises heating under anhydrous conditions at a temperature below 125°C. an alkyl phenol polyglycol ether of an-alkyl phenol having from eight to 10 alkyl carbon atoms and in which the polyglycol ether radicals have an average of 3.5 to six ethenoxy groups with about 10 percent excess sulfamic acid thereby to form a reaction product consisting of said ammonium salt of said polyglycol ether sulfate and free sulfamic acid; adding to and mixing with the thus obtained reaction product a predetermined amount of a base, selected from the group consisting of methylamine, ethylamine, ethanolamine and aqueous ammonia, to adjust the pH of said reaction product within the range of three to 8.5 and mixing the thus obtained product with from one to 0.8 part by weight thereof of a solvent consisting essentially of a lower alkanol and water in relative proportions of 1:1 to 1:3 parts by weight, said mixing being effected in the presence of the base specified, and adjusting the pH of the thus formed solution from 6.5 to 6.9.

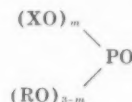
No. 2,759,955. Process for the Esterification of Higher Fatty Acids, patented by Frederic Francois Albert Braconier, Plainevaux, and Raymond Arnould, Liege, Belgium, assignors to Societe Belge de l'Azote et des Produits Chimiques du Marly. Covered by the patent is a continuous non-catalytic process for the esterification of aliphatic monocarboxylic acids containing more than six carbon atoms, which comprises reacting said acids with an aliphatic alcohol containing one to six carbon atoms at a temperature and pressure at least equal to the critical temperature and pressure of said alcohol, the amount of said

alcohol employed being at least equal to the amount stoichiometrically required to react with said acids, separating excess alcohol from the reaction mixture by flashing and separating the resulting esters from the remaining acids by distillation.

No. 2,739,954. Refining Crude Fatty Acid Monoglyceride, patented by Ralph Miller, Woodside, N. Y., assignor to The Chemical Foundation, Inc., New York. The patent teaches a process of refining crude fatty acid monoglyceride material containing unesterified glycerol, diglycerides and triglycerides which comprises intimately contacting crude fatty acid monoglycerides with a liquefied hydrocarbon solvent which is gaseous at ordinary temperature and pressure, the ratio of solvent to crude monoglyceride material being at least about 10:1 by weight and the temperature being between 65° C. and the critical temperature of the solvent to form two liquid phases, one comprising relatively pure fatty acid monoglyceride material and the other comprising principally the impurities, and separating the phases.

No. 2,579,903. Resinous Fungicide, patented by Aaron Epstein and Marianne Falck, Atlanta, Ga., Falck assignor to Epstein. A fungicidally active fusible resinous product is described, formed by reacting a polychlorinated carbocyclic compound containing at least three chlorine atoms, selected from the group consisting of polychlorinated carbocyclic hydrocarbons and polychlorinated carbocyclic hydrocarbon alkoxy ethers, said compound containing substituted chlorine which is evolved as hydrogen chloride by heating and a permanently fusible phenolaldehyde resin, a major proportion of said resin being heated with a minor proportion of said polychlorinated compound at a temperature exceeding the melting point of said resin and with the evolution of hydrogen chloride from said compound.

No. 2,758,093. Laundering Compositions Containing Ortho-Phosphoric Acid Esters, patented by Robert Ernst and George D. Loeff, Los Angeles, assignors to Textilana Corp., Hawthorne, Calif. The patent covers a laundering composition comprising a water dispersible alkanol amide of an acid chosen from the group consisting of alkane, alkene and cycloalkene carboxylic soap-forming acids and having a mean acid number of at least about 170, and a water dispersible mixture of salts of mono acid and diacid esters of orthophosphoric acid, said mixture complying with the general formula.



where R is a radical chosen from the group consisting of normal octyl and normal decyl radicals, and X is chosen from the group consisting of the alkali metal, ammonium, water soluble

(Turn to Page 89)

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SOAP and CHEMICAL SPECIALTIES

Products and PROCESSES

Germicidal Condensate

Germicidal properties are claimed for a condensation product of an alkaline mixture of aliphatic saturated aldehydes with oxaldehyde or ketones. All unreacted starting materials are removed or reacted with non-haemolytic compounds and an alcohol (and water), a fat, an oil or a wax or a combination of these substances is added to the product. The resulting germicide is said to have skin hardening but no haemolytic effects. British patent 747,652, J. Bahr.

—★—

Tallow and Soap Bleaching

Bleaching of both technical tallows and the soaps prepared therefrom yields more satisfactory end products than the bleaching of only either tallow or soap. Best results are reported from combination bleaching of the tallow with sodium chlorite in the presence of phosphoric acid and of the soap with potassium persulfate. Soap made from bone fat (acidity 58 percent, Lovibond color Y 47, R 14.6, B 1) is bleached with two percent potassium persulfate and shows Lovibond color Y 2, R 0.9, provided the fat has previously been bleached with two percent sodium chlorite and 0.5 percent phosphoric acid. If the fat has been treated with 1 percent sodium chlorite alone the soap shows Y 2.7, R 1.1 and 3, 1.5, and 0.5 if the fat has not been treated at all. Presence of iron has no immediate influence on the color but is instrumental in development of color during storage. *Revue franc. corps gras* 3, 172-82 (1956), through *J. of A.O.C.S.*, Sept. 56, p. 432.

—★—

New Micronizer

A jet mill for the processing of insecticides, fungicides, and other specialties utilizes compressed air or steam as a source of energy, effects reduction in particle size by the material grinding upon itself.

Such fluid energy jet mills produce powders with an average particle size of five microns or below on a continuous basis. They are suitable for the processing of large or small quantities.

Certain advantages are offered by these units over the conventional impact grinding equipment. When using cooled compressed air the additional cooling provided by the expansion of the air emerging from the grinding jets facilitates grinding of low melting point and heat sensitive materials unsuitable for grinding by normal impact milling owing to heat generated by such equipment. By the use of heated compressed gas grinding and drying of material may be performed in one operation.

The "Micronizer" fluid energy jet mill is said to be a good blender, distributing as little as 0.25 percent additive through the mass being ground. Ease of maintenance and absence of all risk of metallic contamination are claimed for the equipment. Makers are F. W. Berk and Co., London, England. *Manufacturing Chemist*, July 1956.

—★—

New Mixer Bulletin

Eight different sizes of ribbon type mixers, available with choice of six different agitator types, are described in a new bulletin recently made available by Cincinnati Hildebrand Co., Cincinnati. The mixers, which have working capacities ranging from 25 to 450 gallons, are suitable for processing crystalline and sharp powders, and for cutting fats, oils and shortening into dry powders and flours. The mixers may be provided with any of six agitators, depending on the type of product to be mixed.

Agitators described include center discharge cut-out type, continuous ribbon, T-head reducing, center discharge continuous and "cut-it-in" type. Copies of bulletin

#300 are available upon request to the company at 3410 Beekman St., Cincinnati.

—★—

Insecticide Compound

Eastman Chemical Products, Inc., Kingsport, Tenn., recently announced commercial production of isobutyronitrile, a compound used in manufacture of insecticides, at its Longview, Tex. plant. It is believed that this is the first time the compound has been manufactured in substantial quantities in this country.

Isobutyronitrile is a white liquid with a boiling range between 100 and 105 degrees centigrade. It contains a maximum of one percent aldehydes and 0.8 percent water. The product is available in 55 gallon drums.

—★—

New MM&R Catalog

Magnus, Mabee & Reynard, Inc., 16 Desbrosses St., New York 13, N. Y., published recently a revised edition of its catalog containing over 1,000 listings of essential oils, balsams, concentrated flavors, oleoresins, basic perfume oils, aromatic chemicals, and certified colors, for use in the chemical specialties and allied industries. The catalog includes a number of new products and an illustrated presentation of MM&R's sources of supply and refining and manufacturing operations. Copies are available upon request to the MM&R advertising department.

—★—

In New Dow Post

Dow Chemical Co., Midland, Mich., recently announced that Duane C. Nuechterlein has been assigned to assist customers in the use of aromatic products. Since joining Dow in 1954, he has been in market research.

—★—

New Patents (From Page 87)

amine, and water soluble alkanol amine radicals, and where the C—O linkage of the RO group is on the terminal carbon of the alkyl radical, and where m is within the range of approximately 1.3 to approximately 1.7.



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PRODUCTION *Clinic*

By E. G. Thomssen, Ph.D.

THE desire to patent something new and useful is one that has been experienced by many. This urge is particularly strong in those whose training or background is in production. Research chemists, engineers and others in the scientific fields, probably more than any other group, hope to discover new and useful ideas. The odds, unfortunately, are rather heavily against the inventor being granted a patent. In some cases the attempt to obtain a patent is abandoned due to discouragement resulting from the long delays experienced with and the objections raised by the Patent Office. At times these seem insurmountable and the frustrated inventor decides to drop the attempt to patent his idea.

It now requires about three and one half years, on the average, from the time of filing the initial application until the issuance of a patent. Much of this time, patentees state, is taken up in correspondence with examiners whose misconception of claims requires considerable clarification. Inventors often wonder, after the granting of a patent, if such a thorough and time-consuming investigation really was necessary.

To obtain approval of claims for a patent, no matter what field it covers, is the first and most difficult step. The attitude of the U. S. Patent Office on claims seems to be an unreasonable one. In the first place, it takes a long time before the examiner renders an opinion on a patent application. When the decision is rendered, it may state that the discovery is not practical, covers too much ground or has already been patented. Then, if the objections are disputed successfully, more time is required before the patent is finally issued. Even after the patent papers are obtained, infringement suits

may be brought against the patent holder and the courts may rule the patent is invalid.

On the other hand, if Patent Office examiners turn down the original patent application, a modification of the claims may be re-submitted and possibly overcome previous objections.

Once the patent is granted, as is well known, the patentee or the individual or company to whom the patent is assigned has the sole rights or a monopoly on the idea contained in the patent for 17 years.

The cost of obtaining a patent is not large in comparison with the benefits that may be derived from it. These benefits accrue not only to the persons to whom the patent is granted, but to the company that employs him, to the industry of which he is part and, in numerous cases, to a larger portion of our entire populations.

While some chemical inventions have been conceived or discovered accidentally, they are the exception rather than the rule. Most inventions in the chemical field are the result of painstaking research with a definite goal in mind.

Once a potentially patentable discovery has been made,

prompt action to file a patent application should be taken. If the inventor is an employee, the management of his company should be notified at once and given all the details of the discovery. In turn, the company should quickly determine whether the idea merits the filing of a patent application. The details concerning the discovery should be transmitted in the form of written records to management, rather than discussed only orally. These records may be useful later in patent procedures for establishing the approximate date of the discovery. Such memoranda need not reveal the full details of the invention should the inventor desire to protect himself.

Quite often an original idea or invention may not be complete in itself. It may be the key to a larger invention, which may require still further work to perfect. In situations where one invention may be the basis for other developments, it is usually necessary to increase the number of personnel to carry on further investigations. Thus, it is equally important that the inventor keep full and clear, written, dated records of his procedure. For many patents the record may require a thorough review of patent literature, as well as a listing of other references. Such records may prove valuable later in answering objections raised by the patent examiner. They are also useful for the patent attorney in compiling a list of patent claims.

While a production employee is not expected to be fully familiar with all the intricacies of patent law, he should learn the elementary principles governing the patentability of a new invention. In addition, it is strongly recommended that the would-be inventor consult with either a patent attorney or someone who is familiar with patent procedure. It is also well to know that patents are not granted solely for new chemical compounds. Physical mixtures of various substances that give unusual results; a new process for carrying on reactions, and a "new

Dr. E. G. Thomssen



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Hercules Powder Company announces the availability of Pamak tall oil fatty acids—a major new source of supply for these versatile chemical materials.

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PT56-1

use of a known process, machine manufacture, composition of matter or material" are among the discoveries which are patentable. The phrase quoted is a recent important provision of the patent law which became effective in 1953 through a new codification of these laws. Much patent litigation has been fought over what is considered patentable. It is hoped the new provision of the patent law, outlined above, will reduce litigation on this point in the future.

When it is decided to file a patent application, promptness is of the utmost importance. An application may be filed even before the invention is perfected, if necessary. The earlier the claims are filed, the better the possibility that a patent will be obtained. There are cases on record in which tardy patent applications resulted in failure to obtain a patent because of conflicts with later inventions on which patents had been applied for at the same time as the earlier discovery. Ironically, had the tardy applications been filed sooner patents probably would have been granted.

If at all possible, retain the services of an attorney specializing in patent law. His experience in this field will be extremely helpful in the correct formulation of patent claims and in guiding them through the Patent Office.

While we are on the subject of patents, we could like to call attention to the availability of a rather unusual and useful government service, the U. S. patent pool. For firms seeking new products and having the facilities to mass produce them, this patent pool is extremely valuable. In addition, it can eliminate the need for such firms to develop their own new products. The pool is administered by the Office of Technical Services, a division of the Department of Commerce. It controls patents with a potential worth running into billions of dollars. This governmental department carries on a large volume of industrial research and development, with every branch of

industry included. Patents are secured, and made available gratis, without the necessity of companies doing their own expensive development work. The principal condition in obtaining the rights to such patents is whether new jobs are created through putting the patent into constructive use. The scheme is so unusual that it is difficult at times to convince individuals of the existence of such generosity.

Patents receive special considerations in the tax laws. If a patented article is produced and sold for profit by an individual or company, the ordinary Federal income tax applies. If, on the other hand, the patent is licensed, sold, assigned or used on a royalty basis, income from it is taxed on the basis of a long term capital gain, the highest tax rate for which is 25 percent.

New inventions are worth the effort once patents are granted on them and they are exploited. The spectacular growth of the chemical and chemical specialties industries, due largely to the inventiveness, ingenuity and incentive on the part of research and production men, has also been aided in large part by patented developments.

Steel Equipment

ESSENTIAL parts of every factory are such metal products as steel shelving, lockers, bins, racks, drawers, trays and similar items. A complete line of such products, now in heavy demand because of the continued expansion of plants in the chemical specialties and chemical industry, is available from Lyon Metal Products, Inc., Aurora, Ill. The Lyon line is handled by dealers or company branches in many cities.

Emulsifiable Polyethylene

EIGHT grades of polyethylene, one of which is emulsifiable and can be used in floor polishes, are now available from Semet-Solvay Petrochemical Division of Allied Chemical & Dye Corp., New York 6, N. Y. "A-C Polyethylene

629" is the emulsifiable grade, which may also be used in furniture and automobile polishes. In floor waxes it is claimed to provide superior traffic resistance and possess antislip properties. Semet-Solvay's technical staff in the company's research department is available for consultation with manufacturers interested in using this versatile new polymer.

Power Floor Sweeper

A POWER floor sweeper for all types of industrial plants and installations covering large areas is now available from G. H. Tennant Co., Minneapolis 11, Minn. Tennant claims its model "75", a widely used industrial floor sweeper, does the work of a crew of men by hand. Among other advantages claimed are extra cleanliness in ordinarily dusty areas, extra fast brush change, auto controls, reversal without shifting and ease in servicing.

Sulfonates Folder

A FOLDER describing its line of petroleum sulfonates was issued recently by Pennsylvania Refining Co., Butler, Pa. Covered are the "Penn-Drake Petrosuls." Descriptions, specifications and physical properties of the nine petroleum sulfonates making up the line are given in the folder. The applications and selection guide is a chart which gives all the information about the products at a glance. The "Petrosuls" find use as emulsifying and fat splitting agents, fuel oil and grease additives and rust preventives. Further information and samples are available upon written request.

Processing Kettles

KETTLES for mixing or cooking find use in chemical specialties plants from the largest to the smallest. Lee Metal Products Co., Philipsburg, N. J., specializes in making kettles in a wide range of sizes to fit any requirement. Sturdily built Lee tanks are corrosion resistant and are designed to give years of performance with a minimum of maintenance.

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SOAP PLANT *Observer*

By John W. McCutcheon

THE perfuming of toilet soaps presents special problems, chief of which are loss of odor on aging and discoloration due to light and air. One important and often overlooked source of trouble is the wrapper. Traces of sulfite compounds in the paper can often be the cause of trouble. Of course, the general attitude of the soaper is to blame the perfumer, who, in turn, blames the soaper and while they argue the trouble may be the wrapper!

Or, it might even be the mechanical engineer! How does he get into this picture? Well, some years ago the writer was confronted with a problem of soap spots in a bar containing a cresylic acid derivative. This was finally traced to iron particles rubbed off a screw conveyor that transferred the flakes from the bins to the milling machines. Each iron particle acted as a nucleus which catalyzed discoloration by the perfume used under the mild acidic conditions existing in the presence of the cresylic derivative. Perfume materials may be stable in themselves, but consideration must be given to the basic properties of the soap to which they are added. Of course the perfumes themselves may be unstable. As Mr. Roy Huttleston points out in the July-August issue of the *Givaudanian*, house organ of Givaudan-Delawana, Inc., New York, aldehydes are trouble makers with alkaline bases. (Mr. Huttleston's article is reprinted in the September issue of *Soap and Chemical Specialties*, beginning on page 75. Ed). Cinnamic aldehyde, for example, is to be avoided in a white soap, although alpha amyl cinnamic aldehyde is all right. Vanillin is also a bad actor and is present in such resin materials as benzoin, balsam Peru, etc. He also states that the amines, indole and



methyl anthranilate are light sensitive and that indole should be omitted from synthetic neroli and jasmine oils when used for white soaps. Musk ambrette and musk ketone are relatively light sensitive, but musk xylene is fairly stable to color change.

Large soapers generally blend their own perfumes from aromatics and essential oils. The larger the firm the cheaper the perfume! This is no reflection on the large firm, but just a fact of economics. Tonnage products must be sold on a highly competitive basis and the margin for perfume becomes vanishingly small.

Recently, a large manufacturer changed the wrapper for his toilet soap to a special metalized sealed foil. Presumably the object was to seal in the perfume, but why anyone would want to seal in this smell, is beyond the writer's conception. In addition, there is the difficulty of unwrapping it. Before, with the paper wrapper, it was flip-flop and the jacket was off. Now you need a knife.

It may be conjectured from these few remarks that the writer still continues to use this product. He does, but only because some other leading brands smell worse!

As you get into the specialty

field where the purchaser is buying a scent instead of a soap, you can afford to put high price essential oils into the product. When a three ounce cake of soap sells for \$1.50, \$30 per pound for perfume is not out of line. Usually these type soap products contain a higher percentage of perfume and, for this reason, cannot be put into a white base without noticeable discoloration. Hence, most of these soaps are off-white or come in a variety of solid colors.

Rancidity and discoloration are more of a problem here although, strange as it may seem, just when a high quality base is most required, it is least in evidence. It seems to the writer that the most expensive bars are made from the least processed and cheapest fats and often by inefficient soap boiling methods. A good toilet soap base, for even a colored soap, should be snow white, the alkalinity should be 0.03 or less in the kettle, the salt between 0.50 and 0.45 percent and the unsaturation of the fatty acids as measured by the iodine value should be close to, but not exceeding, 45.

Allowing for a good program, carefully planned and executed, there still remains the matter of testing. Bars from each batch should be kept a year on the shelf and checked quarterly. They should also be given accelerated oven and light tests, although the value of these tests is strictly comparative with known shelf-tested satisfactory samples.

* * *

THE recently released figures on soap and glycerine in the 1954 Census of Manufactures was published in this magazine several months ago. A comparative trend of what is happening to soap by product types, and a forecast to 1960 not previously published as far as the writer knows, is presented herewith in graphical form. The responsibility for forecast to 1960 is the writer's.

The drop in sales and use of soap granules does not come as a



"Locked in the Versene claw"—that's the fate of metal ions when they encounter chelation. They become trapped within the inner ring structure of a newly formed compound where they cannot hinder processing or mar product quality. This phrase is taking on new meaning for detergent manufacturers, as the chemistry of chelation is reviewed.

The Chemistry of Chelation: Part IV

*Applications in the detergent industry · Hard Soaps
Liquid Soaps · Syndets · A new kind of chemistry?*

As has been discussed previously, the Versene® series and Versenol® series chelating agents will inactivate practically all metal ions they contact in solution. The pH factor of the solution or of the finished product influences the choice of agent. To control iron in caustic solutions, look to Versene T®; in alkaline solutions—Versene Fe-3 Specific®; in acid—the Versene series. Or if solutions drift from one pH value to another, an effective Versene combination can be devised. If the right Versene or combination is properly used, processing is improved, and exceptional results are realized. For, unlike polyphosphates that lose effectiveness in alkaline media and at high temperatures, the Versene remains stable; is many times more effective; and can be used alone or with polyphosphates in the formulating of practically all forms of detergents.

HARD SOAPS

The old stand-by, soap, is still the best emulsifier for greases and oils. And with Versene formulated into the product, calcium and magnesium ions become inactivated in solution; no hard-water soap scum can precipitate. In laundry soaps, this chelation action also means that insoluble deposits from previous washings are removed from the laundered cloth. At the same time, the cloth's original softness is restored. Proteinaceous soil is easily solubilized.

The use of such a Versene-formulated product often eliminates the bleach

operation and several rinses in power laundries.

LIQUID SOAPS

Chelating agents improve liquid soaps in several ways. To begin with, a Versene-compounded product made using tap water has the same clarity as one made with distilled or rain water. Such soaps are lighter colored and protected against rancidity and change of color. In addition, silica deposit is retarded when the soap is stored in glass. Concentrated liquid soaps which can be diluted with hard water are obtained through use of additional Versene.

Because Versene inactivates all the metallic salts which produce insoluble soaps, the filtration step of the manufacturing process is simplified. Chilling is eliminated, since no calcium or magnesium soap is present to precipitate when the temperature is lowered. Finished liquid soap does not clog dispensing equipment.

Ordinarily, the correct amount of the chelating agent is simply added to the saponification mixture. If necessary, however, it can be added to the liquid soap after saponification. In the latter case, Versene 9 is recommended. Versene 9 has the same pH—9.3—in dilute solutions as liquid soap, hence large amounts may be added to the finished product without changing its pH.

SYNDETS

Since synthetic detergents do not form insoluble soaps, it is commonly be-

lieved that their action is independent of water hardness. This notion is erroneous—syndets react to form calcium and magnesium salts with a resulting loss of detergency; the only difference is that the salts are soluble, hence cannot be seen. In certain instances, detergents also form precipitates through reaction with iron and various other divalent metallic salts. For these reasons, chelation with Versene, Versenol, or Versene Fe-3 Specific is an important factor in syndets.

With detergents, Versene is best introduced during the manufacturing process. If this is not possible, the bead form of Versene can be added to the builder, which is then mixed with the detergent. Two and one-half times as bulky as the powdered form, the beads will not stratify when packaged.

A NEW KIND OF CHEMISTRY?

Is chelation the answer to all ion contamination difficulties? Despite its many successful applications, the answer is sometimes "no." For, remarkable as it is—in locking up metal ions to simplify processing and improve detergent products of every kind—chelation does not solve all problems in every application. But wherever metal ions do pose a problem, investigation is worthwhile. And we'll help in every way possible. To see if you can put Versene or Versenol products to profitable use, write Technical Service and Development, Dept. SC 903H-1. THE DOW CHEMICAL COMPANY, Midland, Michigan.

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surprise to anyone who has been following the progress of synthetic detergents. Nor does the drop in laundry bar, chip and flake use prove startling. The pressure has been on the laundry bar for some time, and the chip and flake market seems to be easing down to a steady industrial use. The one item that may cause, what the hot copy writer would call a "buzz", is the toilet bar! Actually, this seemed like a pretty stable field of use with synthetic bars still in the diaper state. However, toilet bars did take a small drop, (eight percent), significant of things to come!

Glycerine production not considered in the above graphical presentation took a sharp jump upward from 214 million to 264 million pounds due principally to the heavy production and use of the synthetic product. Census data on glycerine, however, is not very accurate and is probably on the high side since crude production includes interplant transfers of which there is probably quite a bit.

A RECENT bulletin, FS-256, of Fisher Scientific Co., 711

Forbes St., Pittsburgh, Pa., discusses a unitized distillation apparatus and should prove most interesting to researchers working on fatty acids. There was a time, only a few years ago, when it was practically impossible to obtain purified fatty acids for research work. The writer remembers trying to obtain pure linoleic acid and being sold a lot which analyzed 60 percent. Although distillation will not solve all the problems of obtaining the desired fatty acid products, a good 50 to 60 theoretical plate column with all necessary controls would be a great help. Fisher seems to have just that. In addition, and perhaps of the greatest importance, is the fact that the assembly can be varied to meet special requirements merely by buying various size units such as heads and columns. All parts are interchangeable — a very important consideration.

—★—

Booklet on Glycerine

A new 17-page illustrated booklet, "Glycerine Properties and Uses," which describes the chemical and physical properties and the

diverse industrial applications of glycerine, has been issued by Glycerine Producers' Association, New York, it was announced recently.

The booklet is divided into two parts. One is a brief technical discussion of glycerine's chemistry and its physical properties. The other consists of concise summaries of glycerine's function in its principal industrial applications.

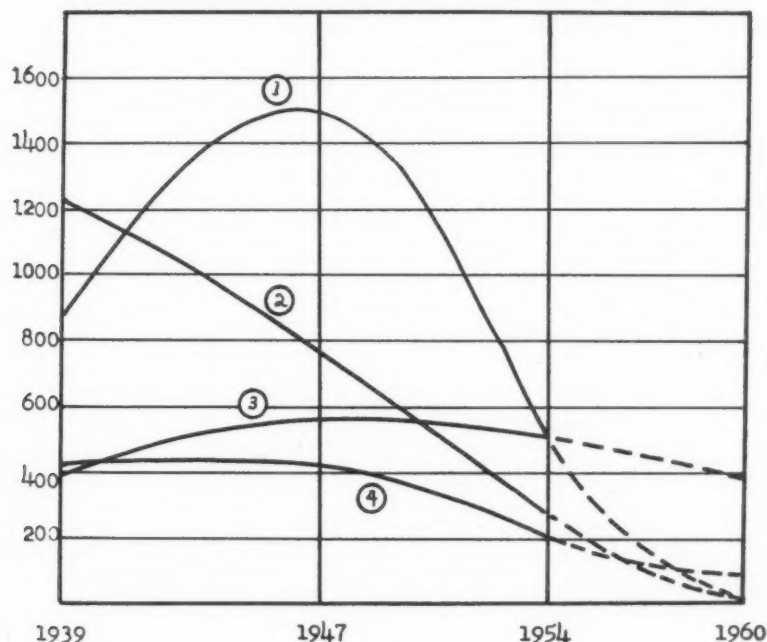
The chemical section explains that glycerine's role as a chemical building block accounts for approximately one-half of its industrial consumption, now running above 225 million pounds per year in the United States. It covers reactions of glycerine to produce esters, the most important industrial class of glycerine derivatives, as well as its uses in the synthesis of ethers, glyceroxides, thioglycerines, and glycerine amines. Technical data in the form of charts, tables and short discussions are given on the physical properties which are the basis for glycerine's use as a plasticizer, humectant, bodying agent, lubricant and product conditioner. Properties covered include its hygroscopicity, stability, non-volatility, solvent power, solubility, viscosity, non-crystallinity, non-toxicity, sweet taste and compatibility.

In the discussion of applications, glycerine's specific functions in the following large quantity uses are detailed: alkyd resins and ester gums, emulsifiers and other chemical derivatives, explosives, cosmetics and pharmaceuticals, paper and cellophane, cork compositions for bottle liners and gaskets and printers' supplies. It is also emphasized that there are hundreds of uses in which smaller but equally essential amounts of glycerine may be required.

An added feature of the booklet is a two-page table showing glycerine's function in 52 principal industrial applications. There is also a summary of glycerine grades and definitions. Copies are available on request from the association, 295 Madison Ave, New York 17, N. Y.

Soap Production by Types (in millions of pounds)

Source: Census of Manufactures, Bureau of the Census



1. Granules; 2.) Laundry bar; 3.) Toilet bar; 4.) Chips and flakes



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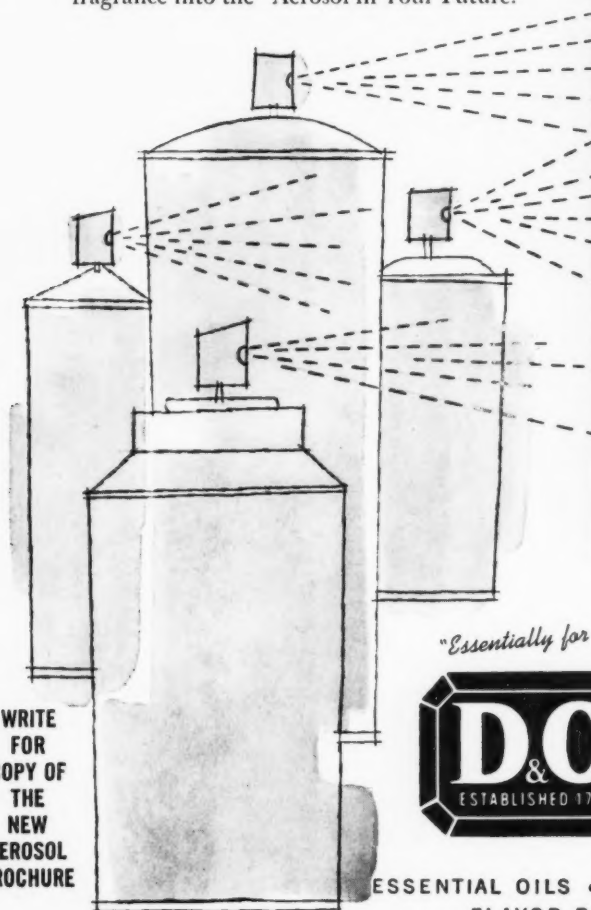
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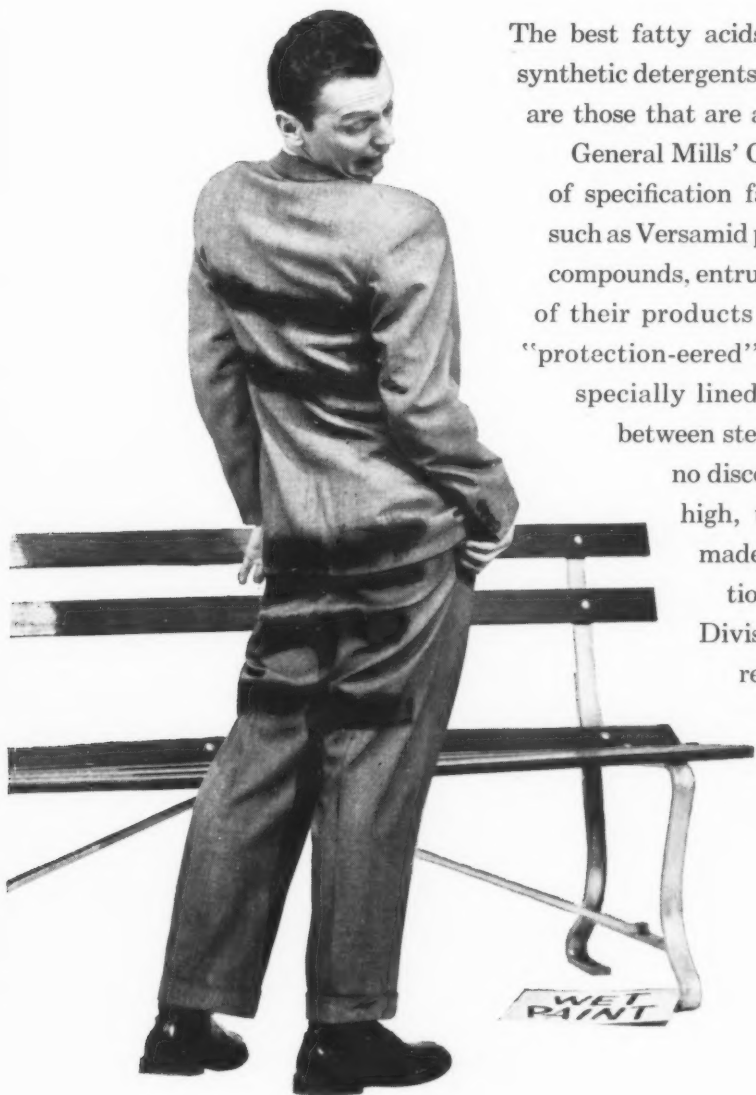
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Free for you to use—only Du Pont offers such a complete background of technical and marketing know-how. And be sure to use Du Pont "Freon" propellents for maximum performance from your aerosol product. You can select from a wide range of "Freon" propellent solutions to find one ideal for your aerosol requirements. For more information write to E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division 1310, Wilmington 98, Del.

*"Freon" is Du Pont's registered trademark for its fluorinated hydrocarbon propellents.



BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY



FLUID'S Latest achievement in controlled packaging*



An excitingly new member has been added to the "FLUID" family of "contract packaging"—polyethylene plastic tubes and bottles by Bradley Container Corporation.

These versatile containers include most of the advantages of glass and metal packages. In addition, they are lightweight, unbreakable, chemically inert, and are easy-to-use squeeze type dispensers.

FLUID'S modern versatile equipment now includes the latest in automatic machinery for filling and sealing of these Bradley containers.

Let FLUID'S controlled packaging methods satisfy your requirements—whether they are for liquid filling, aerosol loading, or these latest plastic tube applications.

"First in Contract Packaging"

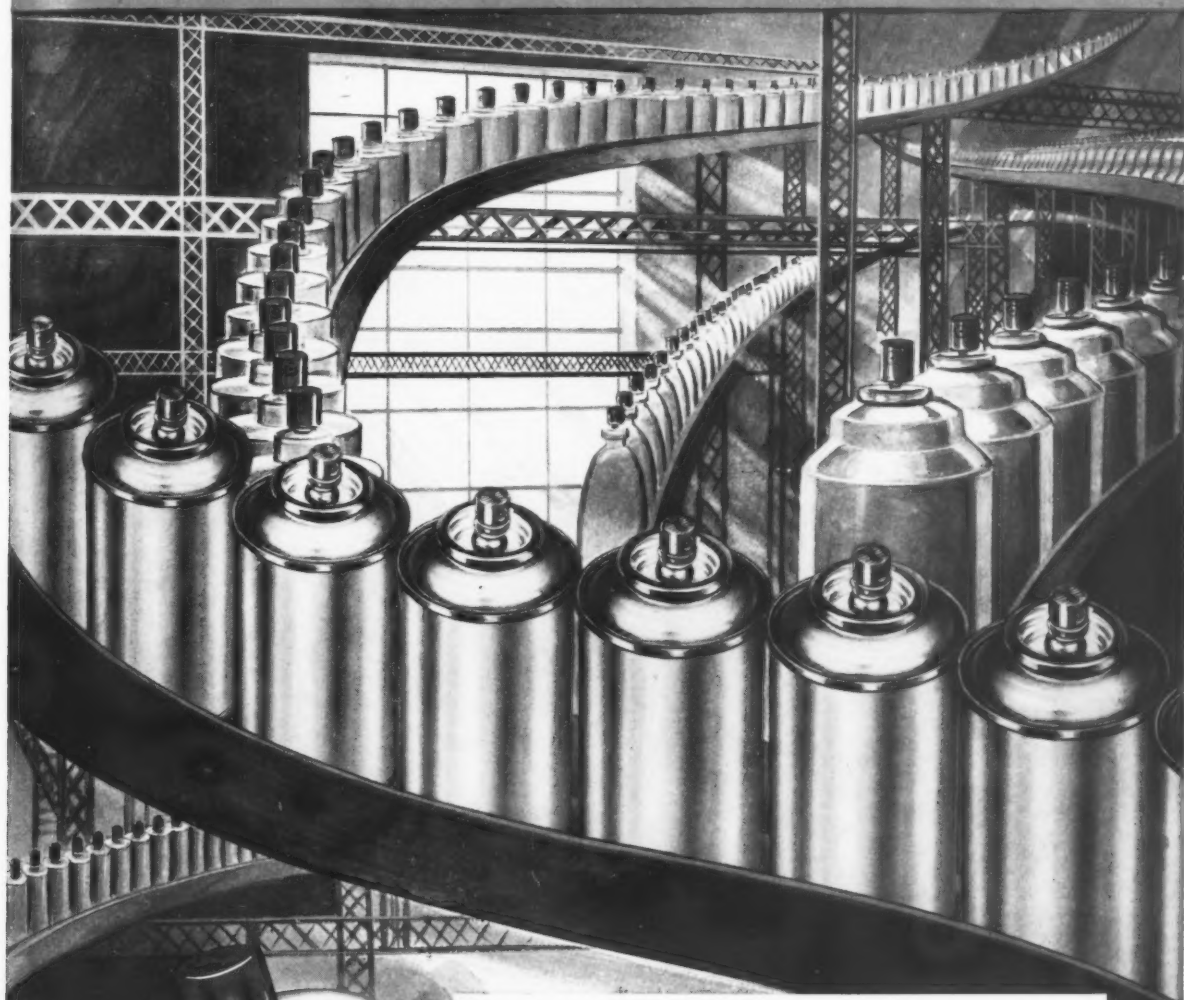
FLUID
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PRODUCTS: AEROSOLS—GLASS AND METAL
LIQUID—TUBE—JAR—DRY PACK FILLING
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THE *Aerosol Valve* FOR YOUR PRODUCT *by Precision*



Aerosol products, (the Automaton^{*} for modern living) work only as effectively as the valves used. And over 400 million time-tested PRECISION VALVES used by hundreds of aerosol product manufacturers throughout the world, is numerical proof of superior performance!

The overwhelming popularity, tremendous output and continued confidence in a quality product has made PRECISION the answer to your aerosol program, regardless of product or container.

We invite your inquiry. Our able staff of aerosol valve technicians is at your disposal to work cooperatively in fully satisfying your particular valve requirements.

*A unit viewed as capable of spontaneous movement or action.



Precision Valve Corporation

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**so you
had your**

SPRA-TAINER.

shave

this morning!



If you began today with a coo-oo-ooling, soo-oo-oothing push button shave, it's almost a sure bet that your rich, smooth lather was dispensed from a Crown SPRA-TAINER. *Practically every nationally-known distributor of aerosol shave creams chooses SPRA-TAINER in preference to all other pressure cans!*

Here are some of the reasons:

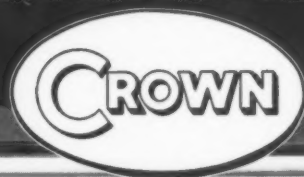


CROWN SPRA-TAINER'S SEAMLESS CONSTRUCTION not only looks better but protects products better!

- ✓ CROWN SPRA-TAINER WRAP-AROUND LITHOGRAPHY makes possible the ultimate in effective can decoration.
- ✓ CROWN'S SUPERIOR DESIGN-WORK. A Complete art service at your disposal, as well as the world's newest and most efficient can-decorating facilities!
- ✓ MARKET RESEARCH, LABORATORY FACILITIES, and other well-known Crown "Plus-Services" to aid the customer.



Call in a Crown representative... learn how Crown's world-wide organization supplies countless industries with Containers, Closures, and Machines for Better Packaging.



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Bottled up by a design

problem?

**LET MARYLAND GLASS DESIGN
A BLUE OR FLINT GLASS CONTAINER
FOR YOUR EXCLUSIVE USE**

Sure, we make bottles and jars. But, more important to you, we design them. Our creative staff has the experience, the skill, the imagination to help you successfully redesign your old package or develop a new one. We've proved this many times.

Now we would like to prove to you that we can design a container that will sell your product. If you have a design problem, get in touch with us. No obligation, of course. Maryland Glass Corp., 2147-53 Wicomico St., Baltimore 30, Md.

PACK TO ATTRACT IN

MARYLAND GLASS

**BLUE OR FLINT
JARS AND BOTTLES**

STOCK DESIGNS—

A variety in blue or flint glass and a complete range of sizes is ready for immediate shipment.



Packaging NOTES

Aerosols Packaging Meeting Topic

THE latest development in all phases of continuous flow production line packaging highlighted the 18th annual Packaging Machinery and Materials Exposition held Sept. 11-14 at the Public Auditorium in Cleveland. The exposition and the Packaging Institute's Forum, held Sept. 10-12, are sponsored by the Packaging Machinery Manufacturers Institute.

A feature of the Packaging Forum was a discussion of the requirements for manufacturing a successful pharmaceutical aerosol product. Morris J. Root, technical director of G. Barr and Co., Chicago, contract aerosol loader, presented a paper entitled, "Pharmaceutical Aerosols from Idea to Product."

More than 8,000 persons visited the four-day show, at which 142 companies exhibited 150 new machines used in production line packaging.

The next Packaging Machinery and Materials Exposition will be held at Atlantic City, N. J., Mar. 24-27, 1958. This is in accordance with the Institute's objective of holding the show on an every-other-year basis.

In discussing aerosols, Mr. Root told how aerosol manufacturing requires unique packaging considerations. "The aerosol package is much more than the container of the product," he explained. "It is actually an inherent part of the product." He said this inseparable product-package relationship underlies the need for adherence to each of the following nine development guideposts.

- 1.) Adjust product formulation to take advantage of spray dispensing, without affecting established product characteristics.
- 2.) Select appropriate type and amount of propellant.
- 3.) Test compatibility of product and propellant.
- 4.) Select appropriate container and valve.
- 5.)

Subject product to extensive clinical and laboratory testing. This would include creation of the correct spray pattern; meeting government and safety require-

Packaging Institute Elects

Roger V. Wilson, general manager of customer research in Chicago for Continental Can Co., New York, has been re-elected for a three-year term to the board of directors of the Packaging Institute, Inc., New York, at the organization's 18th annual meeting, held last month at the Hotel Statler, Cleveland. Also re-elected to the board for a three-year term was W. B. Bronander, Jr., president, Scandia Manufacturing Corp., North Arlington, N. J.

Other officers elected were A. Douglas Murphy, Esso Standard Oil Co., New York, president; Harold Mosedale, Jr., Package Machinery Co., Springfield, Mass., vice-president and treasurer; L. H. Zahn, Ciba Pharmaceutical Products, Inc., Summit, N. J., vice-president and chairman of technical operations committee; and Charles W. Kaufman, Kraft Foods Co., Chicago, vice-president. Elected to the board of directors for the first time was T. C. Baker, market manager of research, Container Corp. of America, Chicago.

A. Douglas Murphy



- 6.) Test stability and shelf life.
- 7.) Test the consumer market to determine whether the new functionality of the product justifies increased costs.
- 8.) Determine operational details through pilot production.
- 9.) Full scale production.

Mr. Root said the last point can "make or break" the effectiveness of the previous guideposts, because of the extremely technical and highly specialized nature of the aerosol product.

Other papers of particular interest to manufacturers of soaps, detergents and chemical specialties were, "Techniques and Methods for the Use of Plastic Coated Glass," by A. R. Marks and Edmund Budzilek, Wheaton Glass Co., Millville, N. J.; "Aerosols . . . Next Stop the Pharmaceutical Industry," by Richard J. Hennessy, Lederle Laboratories Division, American Cyanamid Co., New York; "Aerosols . . . Principles and Scope of Operation," by T. D. Johnson, Kinetic Chemicals Division, E. I. du Pont de Nemours, & Co., Wilmington; and "Functional Coatings of Polyethylene," by M. L. Schechtman, Shellmar-Betner Division, Continental Can Co., New York.

Basic Types of Aerosol

Mr. Johnson described the basic types of aerosols and outlined the choices which the prospective aerosol manufacturer has as to the type of propellant to be used, method of fill and the basic types of aerosol systems which may be employed.

He also discussed the advantages of liquefied gases as propellants as compared with compressed gases. "The pressure remains approximately the same so long as there is any propellant present and the stored up energy to do work is many times that when a compressed gas is used," he said.

Mr. Johnson also emphasized the low toxicity and stability of the fluorinated hydrocarbons used in the aerosol industry. "Because of this low stability," he declared, "few problems are encountered in aerosol products that are



PROTECTION is our business, too



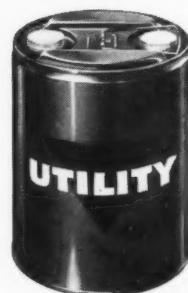
Just as today's tireless doctors, nurses and medical researchers work to protect you and your family from sickness and disease—J&L Steel Containers protect your products by providing dependable packaging that assures safety in transportation and storage. Precise fabrication provides accuracy in all fittings and closures.

J&L drums and pails are chemically cleaned and dried by the JaLizing process. This assures a clean and dry, rust-inhibiting surface and increases the adherence and durability of decoration and interior lining.

Special protective interior linings are available to provide the best possible packaging for your products.

Jal-Coat, J&L's lithographing process, applies your trademark and sales message to the finished container . . . *no side seam touch-up is ever required.*

Plants located at Atlanta, Ga.; Bayonne, N. J.; Cleveland, Ohio; Kansas City, Kansas; Lancaster, Pa.; New Orleans, La.; Philadelphia, Pa.; Port Arthur, Texas; and Toledo, Ohio.



J&L's Utility Pail stacks and ships without carton. Head design assures continuous pouring. A variety of openings are available.



Jones & Laughlin
STEEL CORPORATION · PITTSBURGH

CONTAINER DIVISION

405 LEXINGTON AVE., NEW YORK 17, N. Y.

not encountered in their conventional counterpart."

The exposition was the first sponsored by the Packaging Machinery & Manufacturers Institute to emphasize continuous flow production line packaging. Special emphasis was placed on the relation of machine to machine and the relation of materials to machines. Virtually all exhibitors showed machinery operating and using the newest packaging materials and techniques. Machines were operated by technical personnel furnished by the manufacturer.

In addition to representatives of American industry, the more than 8,000 visitors at the exposition included packaging specialists from Canada, Mexico, Venezuela, the Philippine Islands, Japan, Italy, Germany, Sweden, and Switzerland.

Amer. Can Shifts Four

Four appointments to its sales staff in the Chicago area were announced recently by American Can Co., New York. L. G. Weiner, former department supervisor of sales in the firm's central division, has been named assistant to the manager of the division. R. C. Coleman, former assistant sales manager in the Chicago district, was appointed manager of the Gulf area, with headquarters in New Orleans. He is succeeded by J. M. Dalton, former salesman in the Chicago region. Paul M. La France, former assistant central division commodity manager, has been named division manager.

Walker New Rheem Pres.

A. Lightfoot Walker has been elected president and chief executive officer of Rheem Manufacturing Co., New York, it was announced in September.

Mr. Walker joined the company in 1937 as first general manager of its Australian subsidiary. In 1946 he was transferred to New York to be executive assistant to the president, and subsequently was elected vice-president in charge of Rheem International.

Crown Elects Norman

Albert M. Norman has been elected treasurer of Crown Cork and Seal Inc., Baltimore, it was



Albert M. Norman

announced recently. A graduate of the University of Buffalo, Mr. Norman previously had been associated with Rheem Manufacturing Co., New York, as an accountant.

Merger Meeting Set

Stockholders of Robert Gair Co., New York, will meet in New York on Oct. 26 to consider a proposal to merge the company with Continental Can Co., New York, it was announced recently.

George E. Dyke, president of Gair, said recently that approval of the merger requires the affirmative vote of holders of two-thirds of the outstanding common and preferred stock voting together, and also of two-thirds of preferred shares voting separately as a class. Gair stockholders of record on Sept. 28 will be eligible to vote. The company has outstanding 238,348 shares of preferred and 2,959,462 shares of common. Stockholders last month increased the authorized common to 6,000,000 from 4,000,000 shares.

The merger agreement provides that Mr. Dyke, Raymond F. DeVoe, Robert L. Fitts and Parker Newhall, all Gair board members, will become directors of the surviving corporation when the merger is affected.

A special meeting of the preferred and common sharehold-

ers of Continental Can, previously postponed, will be held at the Hotel Biltmore, New York, also on Oct. 26 to act upon the merger agreement.

Won't Ban Can Co. Merger

Federal Judge Sidney Sugarman refused recently to block the proposed merger of Continental Can Co., New York, with Hazel-Atlas Glass Co., Wheeling, W. Va. Judge Sugarman denied a Government motion for a temporary restraining order. The antitrust division of the Department of Justice had filed suit in a New York Federal Court to enjoin Continental from acquiring Hazel-Atlas. The Government contended that the merger would tend to create a monopoly in violation of the anti-merger provisions of the Clayton Act.

Judge Sugarman ruled that the Government had not shown how it would suffer immediate and irreparable damage if the restraining order were not granted. He suggested that if the merger proved to violate the Clayton Act, the Government move for relief by divestiture.

The Government had contended that if the merger was completed it would eliminate an important competitive factor in the container industry. On July 29 Continental entered into an agreement to acquire the stock and assets of Hazel-Atlas in exchange for 999,140 shares of Continental common stock. The deal was approved Aug. 7 by Hazel-Atlas stockholders.

In the meantime it has been announced that Wheaton Plastics Co., Mays Landing, N. J., has issued a license to Hazel Atlas for the application of plastic coatings to glass bottles for packaging aerosols, employing the Wheaton process. Wheaton is reported constructing a machine by which Hazel Atlas can apply a plastic coating to its glass bottles.

Coated glass bottles for dispensing aerosols are expected to be available from Hazel-Atlas by early next year.

November 1st...

Closing date for entries in the 1956 AEROSOL AWARDS package competition is November 1. Awards to be made at the 43rd Annual Meeting of the

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION

MAYFLOWER HOTEL, WASHINGTON, D. C.

DECEMBER 3, 1956

... to include judging and selecting of best aerosol packages of the year

Divided into ten classes as follows:

1. Insecticides, repellents, moth proofers.
2. Room deodorants.
3. Lacquers, enamels, other protective coatings; paint remover.
4. Other household products—polishes, glass cleaner, rug shampoo, water repellent, etc.
5. Shave products.
6. Hair preparations.
7. Other personal products — shampoo, body deodorants, sun tan oil, drugs, etc.
8. Snow, all types.
9. Industrial products — lubricants, belt dressings, stencil inks, etc.
10. Glass and plastic packages — all products.

... a top award for "best in the show" will also be made

Rules of the contest:

1. All entries must be made in the name of the brand owner or marketer. All products entered must have been freely offered for sale on the open market.
2. Entries will close November 1, 1956. All entries should be sent as soon as possible to the Committee at the CSMA office, and should comprise one completely assembled empty container with attached tag showing (a) name and address of brand owner, (b) class in which entry is made.
3. Only one entry may be made by any marketer or brand owner in any one class, but entries may be made in as many classes as desired.
4. Products entered must be properly labeled in accordance with safety requirements and all laws and regulations pertinent to particular products.
5. Entries are open to any aerosol brand owner or marketer anywhere, and are not restricted to members of CSMA. There are no entry fees or other charges to entrants.
6. Best packages will be selected in ten classes and a "best package in the show" will be named. Judging will be done by a group of qualified experts. Their decisions will be final and will be announced and awards made at the 43rd annual meeting of CSMA in Washington.

For entry blanks or information, write to
AEROSOL AWARDS COMMITTEE
Chemical Specialties Manufacturers Association
50 East 41st St., New York 17, N. Y.

Make Plans for Your Entries Now!



Bottles as *irresistible* as your product

Your powder, shampoo, lotion . . . deserves a glamorous plastic bottle by Continental. Our designers work with a whole palette of forms and colors, and the warm, smooth surface of plastic takes imprinting beautifully. Designed to sell . . . with caps and plugs for spraying, sprinkling, pouring. They're non-breakable, too. So keep ahead of the beauty parade with a distinctively different plastic bottle by Continental.



**CONTINENTAL
CAN COMPANY**

PLASTIC CONTAINER DIVISION

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Our Plant . . . *Your Warehouse*

Besides ample facilities for handling your bulk ingredients, we have extensive warehousing space for the storage of your products after packaging. When it's time to ship, our personnel and equipment are geared to move large or small orders in a hurry . . . and we're glad to handle drop shipping. We

have direct railroad sidings and trucking service at our door. As a result, our plant can serve as *your warehouse* . . . a central distributing point . . . saving time and cutting costs. For details about our complete services in contract filling (liquid, pressurized or aerosol) write, 'phone or wire . . .

PETERSON
Filling and Packaging Co. 
 HEGELER LANE • DANVILLE, ILLINOIS

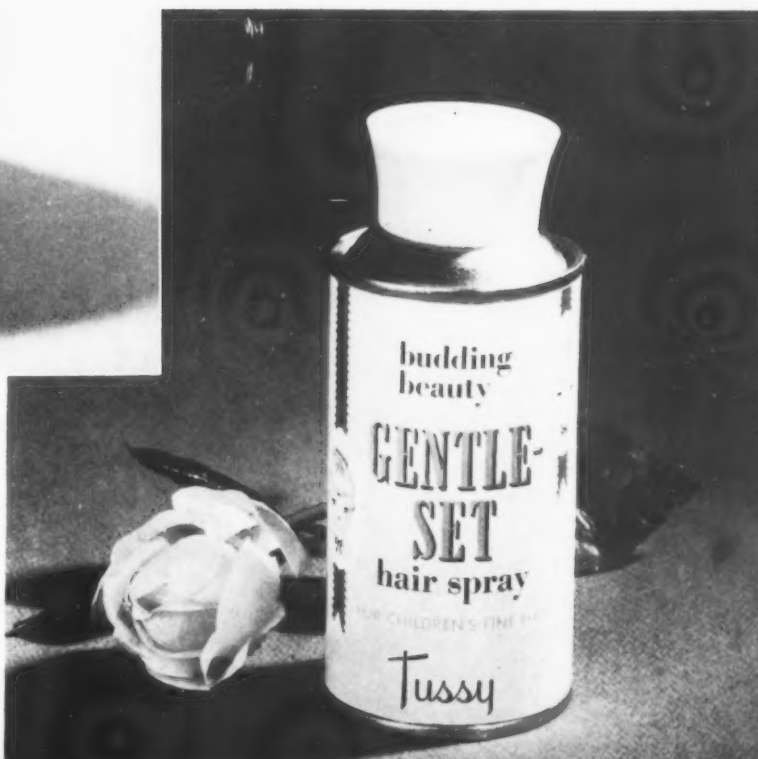
What's New?

Monsanto Chemical Co., St. Louis, recently introduced its new controlled suds detergent, new super-rinse "All," for use in automatic clothes washers. The product contains a non-ionic type surfactant, optical brightener, carboxymethyl cellulose, sequesterant and sodium silicate as a corrosion inhibitor. New "All" is marketed in 24-ounce, 10 and 23-pound packages, 25-pound pails, and 50 and 100-pound drums. Feature of 23-pound package is a high-strength, rayon-and-kraft handle built into a tear strip opening device at the top of box. Overall package color is blue, with name "All" in yellow and white reverse lettering on red panels at upper left and bottom right.



American Petrochemical Corp., Minneapolis, Minn., has just announced "Sweater-Fluff," a new cold water soap for use in washing cashmere, wool, cotton, silk, dacron, orlon, nylon and rayon. Coming in the form of soap "pearls," "Sweater-Fluff" is said to dissolve rapidly in cold water regardless of its hardness. It will be marketed on a nationwide basis through Baskin Laboratories, Inc., Minneapolis, and is packaged in a 12-ounce compression-type friction container supplied by American Can Co., New York.

New "Budding Beauty Gentle Set," aerosol hair spray, was announced recently by Tussy Cosmetiques, New York. Designed for setting children's fine hair, the product contains a lanolin derivative. "Gentle Set," packaged in a colorful pink and gold container with gold and black lettering, is now available in most drug and department stores. A four and one-half ounce can retails for \$1.35. Cans by Continental Can Co., New York, are loaded by Fluid Chemical Co., Newark, N. J. Caps and valves by Aerosol Research Co., Forest Park, Ill.





A new concept in merchandising its new aerosol room deodorant has been developed by Bostwick Laboratories, Bridgeport, Conn., division of B. T. Babbitt, Inc., New York. "Air-Gene," Bostwick's room deodorant, comes in two fragrances and two different can designs—one for the bath room, the other for the kitchen—both in a "Twin-Pak" that retails for \$1.49. Six "Twin-Paks" (12 cans) come in a shipping case that doubles as a counter display complete with back sign card. The kitchen deodorant, packed in a turquoise and lemon-yellow decorated can, features a mint scent. For the bathroom, the deodorant fragrance is lavender and the color combination of the can is pink, white and peacock blue. Cans by Continental Can Co.

A new hand cream, "Waterless," announced last month by Underwood Corp., New York, is designed to remove ink, grease, grime, varnish and carbon stains from the skin. It is applied without water and loosens the stains so that they can be wiped off with a paper towel. "Waterless" skin cleaner with lanolin comes in a five-ounce blue and white plastic tube and retails for 59 cents.



"Bright Touch," a new aerosol hair spray, designed for setting and grooming the hair, marketed by Tussy Cosmetiques, New York, is packaged in a pink, white and gold aerosol container. The product contains a lanolin derivative, which is said to be non-drying to the scalp, and is scented with a floral bouquet perfume. A four and one-half ounce can retails at \$1.35. Cans by Continental Can Co., New York, are filled by Fluid Chemical Co., Newark, N. J. Caps and valves by Aerosol Research Co., Forest Park, Ill.



"Plasti
on and
The p
dags,
comes

A new floor cleaner and wax remover, "Thoro," announced last month by Bixon Chemical Co., New York, is designed for use on floors of asphalt, tile, wood, terrazzo, marble and rubber. The product is said to clean and remove old floor wax in one operation, thus eliminating the scrubbing of floors before rewaxing. It is marketed in five-gallon containers and 30 and 55-gallon drums.



"Floating Floral Soap," claimed to be the first perfumed, colored floating soap in an embossed form, was added to the private label soap line of Hewitt Soap Co., Dayton, O., the firm announced recently. Four cakes of the soap come packaged in novelty box to retail for \$1.95.

"Plasti-Kote," aerosol dog spray, designed to control ticks, gnats, and fleas, on and around dogs, was developed recently by Plasti-Kote, Inc., Cleveland. The product, which also helps control unpleasant odors associated with dogs, is sprayed over the dog's entire body and around the kennel. It comes in a 12-ounce aerosol container and retails for \$1.69.



Baer Joins Barr

Leonard S. Baer has been named eastern sales manager for G. Barr and Co., Chicago, custom aero-



Leonard S. Baer

sol loader, it was announced recently by Douglas Atlas, vice-president. Mr. Baer, who was formerly eastern sales manager of Powr Pak Co., Bridgeport, Conn., aerosol filler, will be in charge of eastern sales, with production and distribution coordinated through Barr's New York, Chicago and Los Angeles plants. His office will be located at the firm's Bronx, N. Y., plant.

—★—

Owens-Illinois Merger

Merger of Owens-Illinois Glass Co., Toledo, and National Container Corp., New York, was approved last month by stockholders of both companies, it was announced recently.

J. P. Levis, chairman of Owens-Illinois, said that the merger is scheduled to be completed and consolidated operations begun by early October. National Container will be operated as a wholly-owned subsidiary of Owens-Illinois.

—★—

Inland Advances Two

Two executive changes were announced recently by Inland Steel Container Co., Chicago, a division of Inland Steel Co., Chicago. Robert J. Greenebaum has been advanced to president of the drum

and pail fabricating division, effective Oct. 1. Mr. Greenebaum formerly had been vice-president in charge of sales in which post he is succeeded by J. Daniel Ray, formerly general sales service manager of Inland Steel Products Co., Milwaukee.

A graduate of the University of Chicago, Mr. Greenebaum joined the container division in 1939 as salesman before it was taken over by Inland. Since then he has held several sales positions in the division and has served one year as plant manager of the division's Chicago plant.

Mr. Ray joined Inland Steel Products Co. in 1948 and has served as staff assistant to the president, manager of the company's Baltimore plant, assistant general manager of sales, and most recently general sales service manager. He was graduated from Kent State University and received his masters degree from the University of Indiana.

—★—

Improved Polyester Film

A new, improved polyester film, which is heat sealable on two sides enabling it to be combined into tubular forms, was introduced recently by Minnesota Mining and Manufacturing Co., St. Paul, Minn.

Tradenamed "Scotchpak" "B," the product is designed for packaging solvents, lubricating oils, and a variety of chemicals. The film is said to be durable, non-toxic, resistant to fungus, and insect penetration. The product has a tensile strength of 8,700 pounds and elongation at break of 270 percent. Burst strength is reported at 25 pounds per square inch and it is stable and flexible over a temperature range from minus 60 degrees to 240 degrees Fahrenheit.

"Scotchpak" "B," is available in a gauge of two and one-half mil thickness and in roll lengths of 700 and 1,000 yards and widths up to 19 and one-half inches. Further information and samples can be obtained from the St. Paul office, 900 Fauquier St.

Crown Appoints Breeback

R. H. Breeback has been appointed manager of technical services, sales department, machin-



R. H. Breeback

ery division, Crown Cork & Seal Co., Baltimore, it was announced recently. Mr. Breeback had formerly headed the machinery division's engineering section.

In his new position, Mr. Breeback will be responsible for the development and coordination of technical information and service including catalogs. This activity involves liaison with the company's domestic and foreign sales agencies, installation, and field service facilities.

—★—

Volume on Packaging

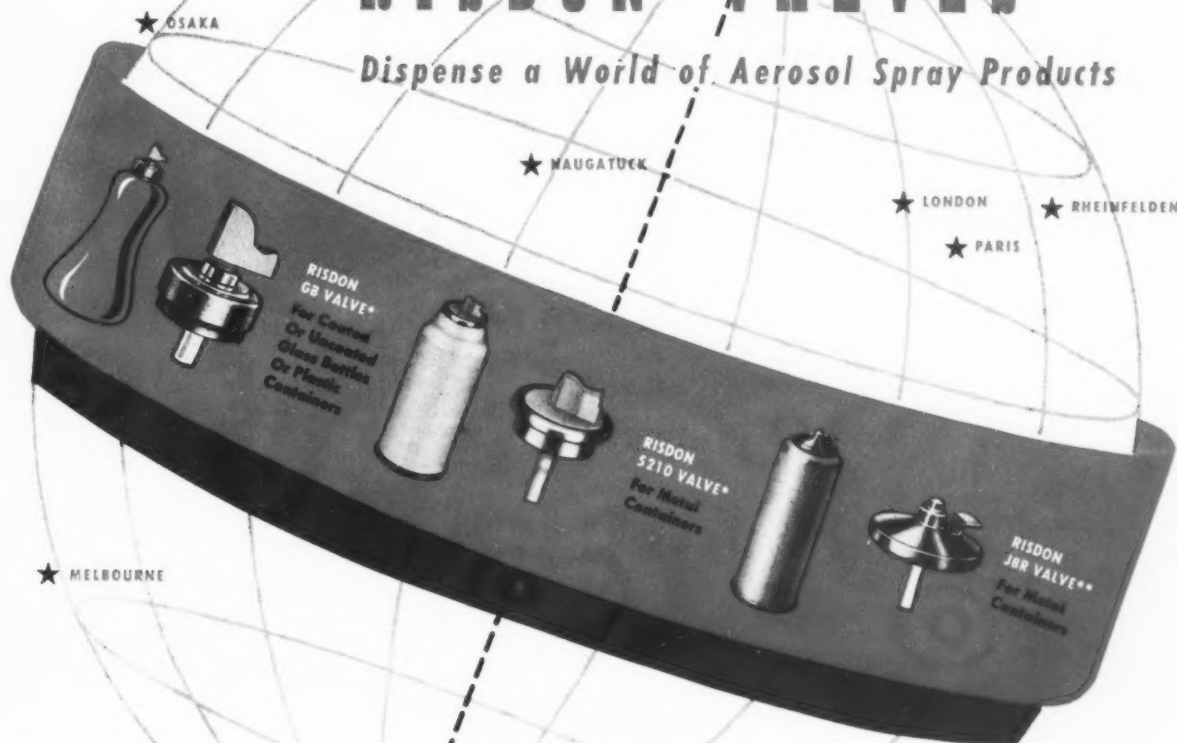
A 695-page volume entitled "First Joint Military-Industry Packaging and Materials Handling Symposium," has been published by the Navy through Office of Technical Services, U.S. Department of Commerce, it was announced recently. A review of proceedings at the symposium, held last October in Washington, D. C., the publication contains more than 30 papers read at the meeting and the minutes of the panel discussions. Among the subjects included are materials handling in production; selection of packaging methods; packaging and handling; and automatic packaging.

Copies are available for \$6 from the O.T.S., U.S. Department of Commerce, Washington 25.

Around the World

RISDON VALVES

Dispense a World of Aerosol Spray Products



FOR

Pressurized Products
Packaged in Glass, Metal
or Plastic Containers.

DISPENSING

Conventional Aerosols,
3-Phase Products, Alco-
hol Base Products, Water-
Base Products, Foam
Products, Powder Sprays,
Metered Sprays, Ultra-
Low Pressure Applica-
tions, Products Contain-
ing Propellant Emulsions
or Dispersions, etc.

Both geographically and in range of application, the Risdon line of aerosol valves covers a world of spray products.

They are produced by Risdon in the U. S. and by licensees in England, Germany, Australia, France and Japan. Here and abroad, they enhance both the performance and appearance of metal, glass and plastic containers, dispensing a vast variety of product formulations.

Write, today, for free booklets on any or all of the Risdon valves shown here.



THE RISDON MANUFACTURING COMPANY
Valve Division, Naugatuck, Conn.

* Patents Applied For
** Patented

Look for these labels soon!



...on Pennsalt's new propellents

ISOTRON

THE KEY TO MODERN LIVING

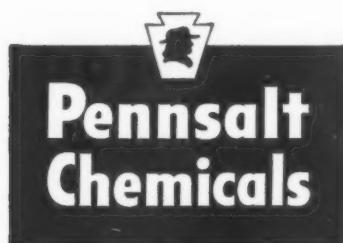
Now—even before the complete line of ISOTRON* fluorinated aerosol propellents is ready—Pennsalt offers the much-needed “missing link” of individualized *service* and assistance to the aerosol packaging industry. Pennsalt will work with you *now* to improve your present products and processes with ISOTRON propulsion, or to develop entirely new aerosols using one or a combination of ISOTRON propellents.

A pioneer and leader in modern fluorine chemistry, Pennsalt stands squarely behind the new ISOTRON line. ISOTRON products are COMPLETELY INTERCHANGEABLE with other reputable fluorinated propellents. They're of precisely the same formulas as the other

products of this kind, and will be manufactured in a modern new plant with the rigid quality control you expect of Pennsalt. ISOTRON propellents will be packed at the plant in all standard containers.

INVESTIGATE THE ISOTRON LINE! Benefit from Pennsalt's advanced thinking and welcome *service*, already available nationwide to manufacturers and packagers of liquid, semi-solid, or powdered consumer products. For further information on ISOTRON propellents, write Isotron Chemicals Dept. 357, Industrial Division, Pennsylvania Salt Manufacturing Company, Three Penn Center Plaza, Philadelphia 2, Pa.

*ISOTRON IS A TRADEMARK OF THE PENNSYLVANIA SALT MFG. COMPANY



Sign Labor Pacts

Two container manufacturing firms, American Can Co., and Continental Can Co., both of New York, have signed three-year labor agreements with the United Steelworkers of America, it was announced recently.

The contracts, which cover 20,000 Canco and 14,000 Continental employees, include virtually identical provisions. The key provision of both agreements is an Oct. 1 wage increase of seven and one-half cents per hour, to be followed by further wage increases of seven

cents on Oct. 1, 1957 and Oct. 1, 1958.

Other terms of the contracts are a rise in job-class increments, improved insurance benefits, elimination of all remaining area and female wage differentials, an increase in holiday time rates from double to two and one-quarter time, a vacation pay raise, and a lessening of service time needed for employees to obtain supplemental unemployment benefits. The contract became effective on Oct. 1 and is not open for negotiation again until Oct. 1, 1959.

As a result of the agreements, Continental recently announced, effective Nov. 1, an increase of ten cents per base box in the prices of its containers made of tin mill products, plus a three percent increase to cover other higher costs.

The ten cent increase exactly reflects the steel companies' increase of ten cents per base box on tin mill products. The three percent increase reflects the rise in other costs such as materials, supplies (other than tinplate), freight and wages.



**All styles of steel pails
and drums — Sizes 1-1½-2-2½-3
3½-4-5-6-6½-10-12 gallons**



**Available with all types
Nozzles and Pouring Spouts**

Vulcan makes the finest open head steel pails and closed head drums in the above sizes... Every pail thoroughly tested... All meet rigid I.C.C. specifications.

Hi-Bake Linings Assure Protection

Vulcan chemists will work with you to develop a Hi-Bake protective interior lining to meet your specifications and packaging problems... Your assurance of "positive product protection." Complete facilities available to design and lithograph your Brand Name on any size or style container.

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CANCO Buys Bradley

American Can Co., New York, has purchased Bradley Container Corp., Maynard, Mass., manufacturer of extruded plastic tubes and bottles, it was announced late last month by William C. Stolk, president of American Can.

Formerly a subsidiary of Olin Mathieson Chemical Corp., Baltimore, Bradley began commercial production of tubes and bottles last year.

American Can will operate the company as a wholly-owned subsidiary operating under the Bradley name. William Stolk will serve as president of the new subsidiary while L. A. Britzke, Canco general manager of engineering, has been named vice-president and general manager.

O-I Increase Prices

Owens-Illinois Glass Co., Toledo, announced recently, it planned to increase prices of nearly all its products in the near future. Carl R. Megowen, president, said that the rise for some items would be substantial.

"Our labor costs have continued to rise at a rate exceeding increases in productivity," he said. "Our freight, fuel, material and service costs have also continued to rise. We have experienced substantial increases in the cost of replacing and modernizing production facilities. Depreciation allowances are inadequate to cover the cost of replacing facilities."

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SPRAY GUN



● **ANY-DIRECTION VENT**—even sprays upward, for under side of foliage. Preformed in just the right size; no danger of user punching hole too large or too small for proper use.

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■ **EASY-FILL TOP**—Large 1 7/8" friction plug.

* **WAX-COATED INNER TUBE**—Special wax gives moisture protection and smoother pumping action.

○ **SPECIAL FELT INNER VALVE**—Allows easy passage of air during pumping action, yet effectively seals in powder.

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Chances are there is already a Perma-Lined container tailor-made for your individual product. If yours is a "problem product", however, we're ready, willing and able to develop a new Perma-Lining to fit it.

There's a wide variety of Perma-Lined containers waiting to go to work for you: open-top lug cover pails (sizes 2-to 12-gal.) and our 5-gal. tight head pail. For the finest in product protection, exciting lithography and tailor-made service, look into Continental's Perma-Lined steel containers now.



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NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the *Gazette*. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of \$25 must accompany notice of opposition.

Meta Bond—This for rustproofing compound. Filed May 27, 1955 by International Rustproof Corp., Cleveland. Claims use since in the year 1947.

Warexin—This for sterilizing and deodorizing compound. Filed June 16, 1955 by Guardian Chemical Corp., Long Island City, N. Y. Claims use since Mar. 18, 1955.

Ivor-San—This for fungicide. Filed July 28, 1955 by Ivory System, Inc., Peabody, Mass. Claims use since June 1, 1955.

Whiff 'n Pooch—This for pesticides. Filed Aug. 9, 1955 by Middleburg Distributors, Inc., Middleburg, Va. Claims use since May 19, 1955.

"Kleer-Kleen"—This for composition used for cleaning and conditioning chalk boards. Filed Apr. 1, 1955 by New York Silicate Book Slate Co., New York City. Claims use since Feb. 24, 1955.

Bull-Ox—This for deoxidizing cleaning and sanitizing composition. Filed Apr. 4, 1955 by Harry L. Peterson, doing business as Bull-Ox Solvent Co., Gypsum, Kans. Claims use since on or about Jan. 1, 1955.

Pan Dandy—This for detergent soap especially designed for kitchen usage in commercial institutions. Filed May 25, 1955 by Economics Laboratory, Inc., St. Paul, Minn. Claims use since Aug. 18, 1947.

Rexit—This for liquid paint and varnish remover. Filed June 3, 1955 by American-Marletta Co., doing business as Berry Brothers, Chicago. Claims use since in or about 1930.

H bar H—This for floor cleaner, wax remover, liquid scrubbing soap, hand soap, etc. Filed Oct. 25, 1955 by Hubbs and Howe Co., Buffalo. Claims use since on or about July 1, 1954.

Paint-Blitz—This for paint and varnish remover. Filed Jan. 18, 1956 by Martin-Senour Co., Chicago. Claims use since Nov. 1, 1955.

E-Z Groom—This for cleaner-insecticide for dogs and cats. Filed Jan. 24, 1956 by Polk Miller Products Corp., Richmond, Va. Claims use since Dec. 31, 1954.

Stanzal—This for all-purpose detergent for general household use. Filed Jan. 24, 1956 by Stanson Chemicals, Edgewater, N. J. Claims use since Nov. 1, 1955.

Breezy—This for chrome cleaner. Filed June 22, 1955 by Great Lakes

Chemical Co., Canton, O. Claims use since Apr. 1, 1952.

Columbia—This for liquid and paste waxes for all types of surfaces. Filed Aug. 15, 1955 by Columbia Wax Co., Glendale, Calif. Claims use since Aug. 29, 1950.

Rub-Less—This for metal polish. Filed Nov. 23, 1955 by Feiner Chemical Mfg. Co., Springfield, Mass. Claims use since December 1910.

Panda—This for floor wax. Filed Dec. 8, 1955 by Standard Coffee Co., doing business as International Consumer Products Co., New Orleans, La. Claims use since Aug. 1, 1955.

Glass-Nu—This for polishing compound for glass. Filed Jan. 16, 1956 by Van-Lee Associates, Detroit. Claims use since Apr. 12, 1955.

Mars—This for insecticides, pesticides, air freshener, and moth proofers. Filed June 17, 1955 by Copley of Boston, Inc., Boston. Claims use since Apr. 1, 1955.

Famin-Moth—This for moth proofing compound. Filed July 15, 1955 by Milton Hecker, doing business as Famin-Mothproofing Products, Chicago. Claims use since April 1953.

Isolan—This for insecticides. Filed Oct. 5, 1955 by Geigy Chemical Corp., New York City. Claims use since Dec. 31, 1952.

all—This for laundry starching compositions. Filed Oct. 10, 1955 by Monsanto Chemical Co., St. Louis. Claims use since Sept. 9, 1955.

No-Dust-O—This for floor sweeping compound. Filed June 27, 1955 by No-Dust-O Co., St. Louis. Claims use since in or about 1923.

Sweep-O—This for floor sweeping compound. Filed June 27, 1955 by Sweep-O Co., St. Louis. Claims use since in or about 1919.

Scour-Foam—This for sudsing cleanser having detergent and abrasive cleaner properties. Filed July 5, 1955 by Tesco Chemicals, Inc., Atlanta, Ga. Claims use since in or about 1949.

Zotos—This for shampoo. Filed Feb. 10, 1956 by Sales Affiliates, Inc., New York City. Claims use since Sept. 2, 1955.

Lottie's Luster—This for furniture polish and restorer. Filed Nov. 17, 1955 by Lottie B. Smith, Santa Rosa, Calif. Claims use since Sept. 15, 1955.

Alumakleen—This for metal polishing and cleaning compounds. Filed Jan. 30, 1956 by Gray-Ford Chemical Corp., Chicago. Claims use since Dec. 9, 1955.

Columbia SafeGuard—This for emulsion floor finish in the nature of a polish. Filed Feb. 3, 1956 by Columbia Wax Co., Glendale, Calif. Claims use since Jan. 9, 1956.

Bird Guardian. K-9 Guardian—These for insecticides. Filed Sept. 1, 1955 by Guardian Industries, Inc., New York City. Claims use since Aug. 15, 1955, and May 19, 1955, respectively.

Alvex, Vandor—These for reodorizing and perfuming agents used in soaps, detergents, and household cleaners. Filed Aug. 12, 1955 by van Ameringen-Haebler, Inc., New York City. Claims use since July 29, 1954.

Lustr-Glo—This for rug, upholstery, and fabric cleaning compound. Filed Aug. 16, 1955 by Lustr-Glo, Inc., Evanston, Ill. Claims use since on or about July 1, 1955.

Mef-co—This for all-purpose cleaning preparation in liquid and solid forms. Filed Nov. 10, 1955 by Russell H. McCulloch, doing business as McCulloch Sales Co., Mountain View, Calif. Claims use since Jan. 7, 1947.

Chlorexane—This for cleaning fluid. Filed Nov. 17, 1955 by Sol Epstein, doing business as Sealed Liquids Co., New York City. Claims use since Oct. 1, 1955.

Sulframin E—This for all-purpose, aryl alkyl sulfonate detergent in liquid form. Filed Dec. 13, 1955 by Ultra Chemical Works, Inc., Paterson, N. J. Claims use since December 1948.

T-H—This for laundry soaps, laundry detergents, all-purpose cleaning compounds, metal cleaning compounds, etc. Filed Dec. 15, 1955 by Thompson-Hayward Chemical Co., Kansas City, Mo. Claims use since March, 1933.

Alumicone—This for cleaner, polish, and protective coating for use on aluminum subjected to outdoor weathering and containing silicone. Filed Dec. 5, 1955 by Louis F. Marcantonio, doing business as Mark "A" Products, New York City. Claims use since May 1, 1955.

Robot Gardener—This for insecticide and weed killer cartridges. Filed Aug. 29, 1955 by Walter Ratner, doing business as Grant Co., Chicago. Claims use since June 18, 1955.

Fleece—This for fabric softener. Filed Oct. 3, 1955 by Cal Products Co., Los Angeles. Claims use since Aug. 11, 1955.

H Bar H—This for disinfectants and deodorants. Filed Oct. 25, 1955 by Hubbs and Howe Co., Buffalo. Claims use since on or about July 1, 1954.

Old Colony—This for paint and varnish remover; rust cleaner, and general purpose cleaner. Filed Oct. 21, 1954 by Old Colony Paint & Chemical Co., Los Angeles. Claims use since Mar. 3, 1928, on paint and varnish remover.

Beeman's—This for hand cleanser and soap. Filed Apr. 18, 1955 by Beauty Counselors, Inc., Grosse Pointe, Mich. Claims use since Oct. 15, 1947, on soap.

Nulox—This for shampoos. Filed Aug. 26, 1955 by Nulox Corp. of America, Houston. Claims use since Nov. 4, 1949.

Sol-Speedi-Dri—This for cleaning material having oil and grease absorbent and fire prevention properties. Filed Oct. 18, 1955, by Minerals & Chemicals Corp. of America, Philadelphia. Claims use since Sept. 28, 1942.

Lark—This for detergent for general cleaning purposes having deodorizing and disinfecting properties. Filed Oct. 20, 1955, by Lehn & Fink Products Corp., Bloomfield, N. J. Claims use since Sept. 2, 1955.

Kontrol—This for shampoo. Filed Dec. 27, 1955, by Mark Allen Co., Detroit. Claims use since Oct. 10, 1950.

Cameo—This for copper cleaner. Filed Jan. 16, 1956, by Cameo Corp., Chicago. Claims use since July 31, 1950.

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The Right Propellants—"Genetron" propellants are the first choice of many leading fillers and marketers for formulating household, drug, cosmetic, agricultural, industrial and other types of aerosol products. They provide the right propellant for every aerosol need, every pressure and compatibility requirement, every type of container.

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*Aerosol Pressure Products Survey, Chemical Specialties Manufacturers Association

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SOAP and CHEMICAL SPECIALTIES

PRESSURE PACKAGING

A SIMPLE, economical apparatus and method for measuring aerosol particle size has been sought for some time by manufacturers of aerosol products, and we thought you might be interested in the current status of the search.

Most promising development to date appears to be the cascade impactor developed by Mason Pilcher at Battelle Memorial Institute, Columbus, O. That instrument and its possible value were discussed in this column earlier this year (April issue), comments being based upon Dr. Pilcher's technical paper before the Aerosol Division of the CSMA at its 42nd annual meeting in New York, last December. Dr. Pilcher estimated the cost of development of a reliable measuring instrument and method at \$25,000, with hopes that the resulting instrument could be mass produced for \$200-\$250 . . . well within the pocketbook range of even the smaller aerosol producer.

Current status: Battelle has officially contacted aerosol loaders and suppliers of components to determine their willingness to "chip in" toward the \$25,000 development program. If 12 companies could be interested, that would make the individual contribution slightly more than \$2,000 and we understand that to date tentative contracts in that amount have been received from three or four companies. Interest, from the financial commitment standpoint, is slow but backers are hopeful others will come in to meet the \$25,000 goal.

Meantime, Dr. R. C. Robbins, associate chemist in the Atmospheric Chemical Physics Section of Stanford Research Institute, has contacted several aerosol suppliers to outline the west coast Institute's facilities for particle size measure-

ment . . . using equipment developed in connection with studies of smog problems in Southern California.

Stanford Institute's equipment includes a camera for high speed photography of aerosol particles illuminated by reflection of a high voltage, intermittently operating, light source. Negative or print images can then be enlarged 25 to 50 times for visual counting and measurement of particles.

More important . . . to eliminate the tedious and accuracy-questionable method of visual counting and measurement . . . Stanford Institute has assembled and is now calibrating an apparatus that will handle the photo analysis chore mechanically. Similar in principle to apparatus developed at Armour Research Foundation (See June, 1956 "Pressure Packaging" column), the instrument will permit counting of aerosol particles in ten different size groups.

Dr. Robbins is not suggesting the Stanford instrument and method as an out-and-out solution to the aerosol problem but broaches it as a possibility. Unlike the proposed Battelle program, Stanford's suggestion would not cover development of an instrument that could be produced in quantity at low cost . . . Stanford would be interested only in taking on aerosol particle measurement assignments for individual companies.

Armour Research Foundation also would be interested, we hear, in using their instrument and method on individual job assignments. Sidney Katz of ARF has outlined Armour's facilities to CSMA groups in the past. (See article in September, 1956 *Soap and Chemical Specialties*.)

Why the need for aerosol particle size measurements?

Primary reason is the U. S. Department of Agriculture regulations on particle size of aerosol insecticide sprays to assure adherence to minimum insect-kill standards. In space insecticides, for example, the government requires that 80 percent of particles in the aerosol spray must be under 30 microns in size, with no particles in the spray over 50 microns. Anyone wanting to market an aerosol space insecticide in the U. S. must conform to those regulations, and manufacturers must be sure their formulation meets the minimum standard. Through past work, the Department of Agriculture has developed a long list of insecticide formulations that conform to the regulations, and as long as a manufacturer uses one of the already-tested formulations he doesn't have to worry about particle size measurement. But as soon as he develops or uses a formula not already tested, he must conduct measurements to win USDA approval of his product.

The problem is different in the case of residual sprays. Here, toxicity enters the picture because the chemical ingredients in residual sprays may be much more toxic than the bug-killing ingredients in space sprays. In a residual spray, the particle size must be large enough so that the spray droplets will not float in the air and thus create an inhalation toxicity hazard to humans.

Neither the Battelle, nor the Stanford or Armour instruments and methods are adaptable to residual insecticide analysis. Scientific committees of CSMA's Aerosol and Insecticide Divisions, however, have come up with methods which they believe will meet the problems in connection with residual sprays. Such methods are expected to be presented to the Divisions' scientific committees for consideration in the near future.

Aside from meeting USDA requirements for insecticides, a reliable, economical apparatus and method for particle size measure-

ment would be helpful as a quality control tool for manufacturers of other aerosol products like room deodorants, paints, or hair sprays. No regulations exist as to particle size for such products, but reliable analysis of the particle size obtained with various formulations or valve designs would be one step in developing new and better products.

* * *

BECAUSE insecticides account for such a large share of aerosol production, we thought you might be interested in a few recent things we've read about resistance of flies and other insects to chemicals. What caused us to re-read the short bits and abstract them are the frequent statements we hear from fellow householders to the effect that current insecticides just don't seem to kill the flies . . . in fact, the insects sometimes seem to thrive on a dosage of the intended killer.

Well, first, a British government entomologist has found that flies susceptible to DDT, as well as those resistant to the insecticide that's used in so many of the modern aerosols, are able to develop resistance to small amounts of the poison. Basis of his findings was two series of experiments.

In one, flies were given equal doses of insecticides at intervals of 24 to 48 hours. Different insecticides were tried on different groups of flies. DDT, dieldrin and Diazinon were fully cumulative even after 48 hours, he found, but gamma BHC (benzenehexachloride) was not. The gamma BHC was about half as effective by the time the second dose was administered.

In the second series of experiments, the British researcher applied smaller amounts of each insecticide daily to individual flies, and checked the resistance of different age groups. He concluded that, although the degree of resistance to different insecticides varies "considerably," house flies from a normal strain can "eliminate, metabolize, or store in harmless condition" some of the absorbed insecti-

cide "provided that the dosage is sufficiently low."

That last statement seems to us to have particular bearing on the question of efficiency of aerosol insecticides. The fact that the aerosol applies a relatively low dosage . . . even though the method of application might be more efficient in hitting the flying insects . . . might account, along with flies' apparent ability to develop resistance through exposure, for many consumer's feelings that the sprays don't kill as well as they formerly did.

The British scientist also observed that those flies which are able to resist the chemical treatment to the greatest extent produce offspring which inherit the resistance of their parents. So, the one you spray but don't kill gets back at you by rearing harderier, nastier flies.

The other clipping we re-read holds a glimmer of new hope. It told of a Harvard scientist who's found that a hormone, extracted from the abdomen of an adult male *Cecropia* silkworm, creates a freak, shortlived insect when applied to the outside of an insect in the pupal stage of development. The hormone prevents metamorphosis—the process by which insects change form, as when caterpillars change into butterflies. The resulting "freak" dies before it can develop and reproduce as a pest.

Since it is unlikely an insect can evolve resistance to its own hormones, the Harvard researcher observes, the newly extracted hormone probably will be an effective permanent insecticide after it has been identified and produced in the laboratory.

Whether the hormone can be sprayed from an aerosol container, and whether harried householders can learn to identify the pupal stage of the insect to determine their spray target, remains to be answered . . . but where there's life there's hope.

Within a few months the ICC aerosol shipping regulations will be greatly altered. It is prob-

able that all aerosol products will be exempt from any flammability requirements as far as marking and packaging. The only outward change caused by this will be that no red diamond shipping label will be needed. The only limitation will be one of pressure. Most products will still have to be heated to 130° F., as is now required.

The pressure limitations on foam type products have been raised from 105 pounds per square inch absolute at 70° F., or 140 psia at 130° F., to 115 psia and 150 psia, respectively. Because some additional and biological products are destroyed by heating to 130° F., heat testing no longer is required for every can of such products. Instead, a manufacturer will be allowed to test one out of every 500 cans at the 130° F. temperature.

Although the ICC shipping regulations were never meant as consumer protection, they nevertheless had this effect. These pending changes mean that, in the future, limitations of any hazardous properties of aerosol products is strictly in the hands of the marketer. Individual loaders and marketers now should initiate their own recommendations to accomplish voluntarily what formerly was required by regulation. They should take care to minimize the hazards of flammability, toxicity, and excess pressure. All of these properties should be evaluated carefully prior to the marketing of any product.

—★—

New Metalsalts Fungicide

Metalsalts Corp., Hawthorne, N. J., recently announced the development of a new fungicide and bactericide called "Meta-san." The new product is claimed to be highly soluble in both water and organic solvents and may be used as a mildewcide and preservative—both in oil and water base paints. In liquid form, for use with oil paints, the product is called "Meta-san O," for use with water base paints it is tradenamed "Meta-san W."

Chemical Specialties

Investigate . . .

If you are a manufacturer of disinfectants, insecticides, floor waxes, aerosol products, soap and detergent specialties, automotive chemicals, and kindred chemical specialties, this is a suggestion to investigate the advantages of membership in the Chemical Specialties Manufacturers Association.

For over 40 years, leaders in the industry, from the smallest to the largest, have been members of CSMA and identified with its activities. Cost of membership is low. Its services are broad and helpful. Contacts within its membership can be extremely valuable.

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H. W. HAMILTON, *Secretary*



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Epolene "E" is a low-viscosity, low-molecular weight, emulsifiable polyethylene wax, highly compatible with other waxes and exceptionally uniform in quality. It is hard and tough, comparing favorably with high-priced natural waxes such as carnauba. It produces water emulsion polishes that exhibit high gloss, excellent flow-out properties, and outstanding scuff and dirt pick-up resistance. It resists water-spotting, as well as the attack of many chemicals.

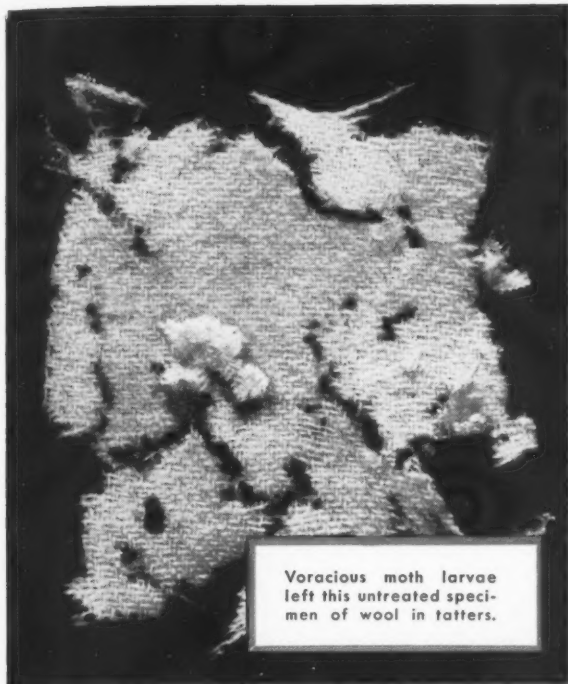
In addition to sales features, Epolene also offers you manufacturing advantages. Pellets of this material are easily handled and melt rapidly for

blending. Epolene is dependably uniform, maintaining its low viscosity and acid number of 8-13 consistently, shipment after shipment. Thus, by standardizing on Epolene, you can standardize your formulas and procedures.

Epolene is also available in a non-emulsifiable type—Epolene "N"—for use in paste polishes. Eastman will be glad to assist you in adapting your formulations to use either of these new waxes. For samples and more information, write: EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, Chemicals Division, KINGSPORT, TENNESSEE.

Epolene
EASTMAN POLYETHYLENE WAXES

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City; Framingham, Mass.; Cincinnati; Cleveland; Chicago; St. Louis; Houston. West Coast: Wilson Meyer Co., San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.



Voracious moth larvae left this untreated specimen of wool in tatters.

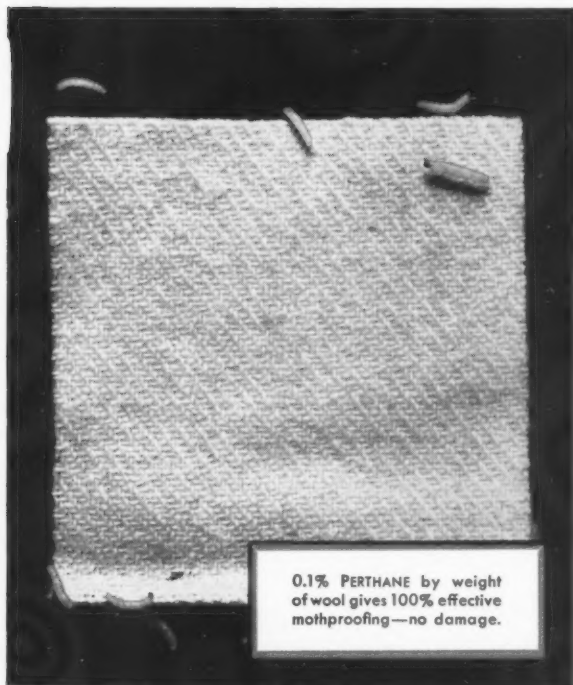
UNTREATED WOOL



Ineffective agent does not repel larvae, specimen suffers irreparable damage.

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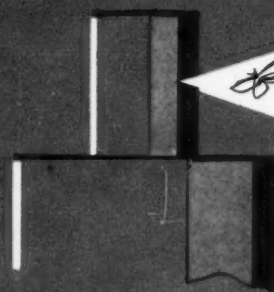
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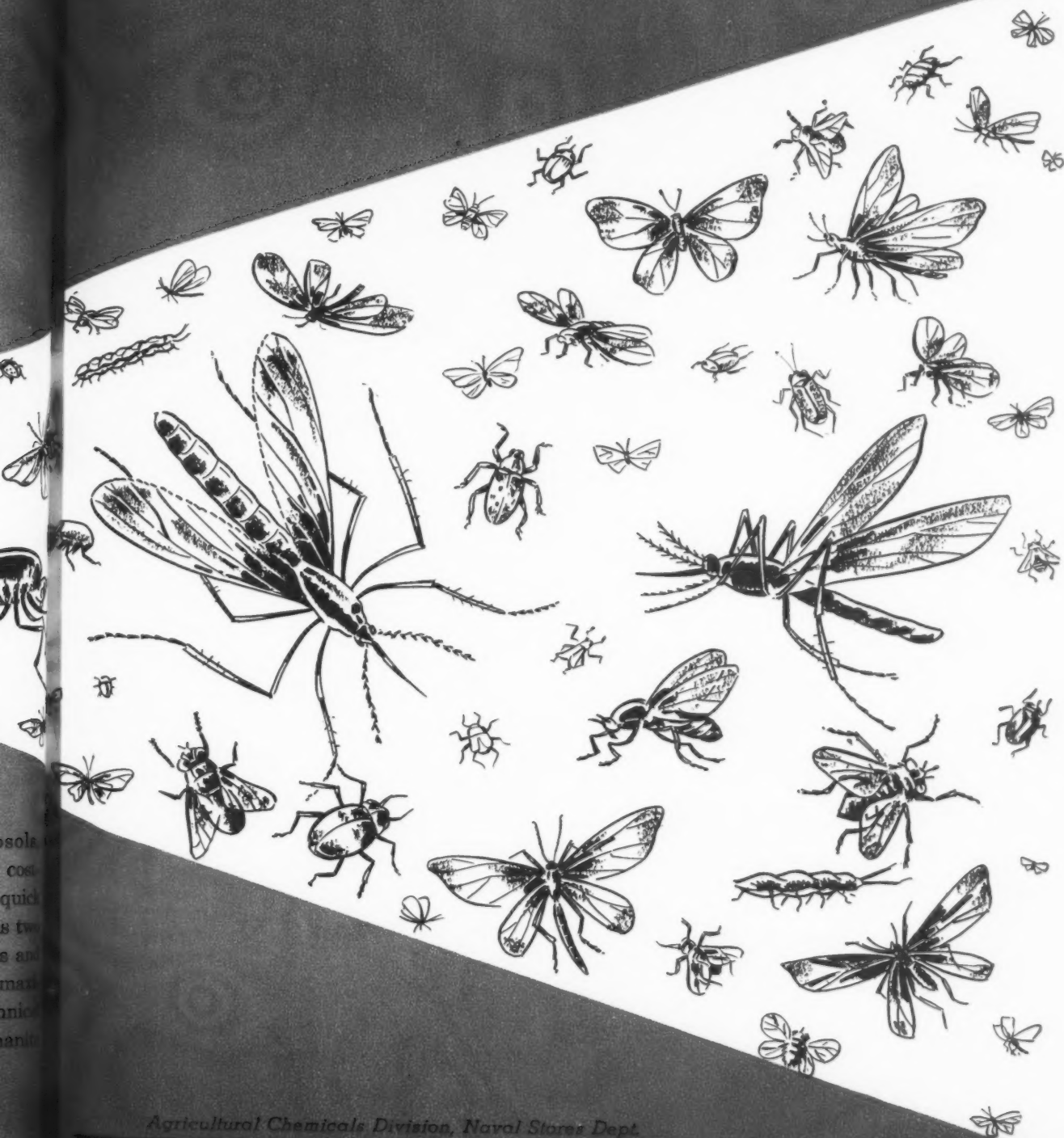


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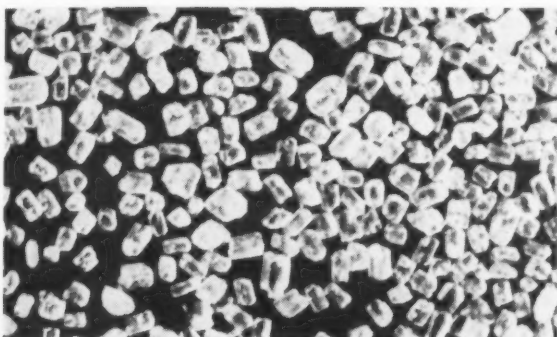
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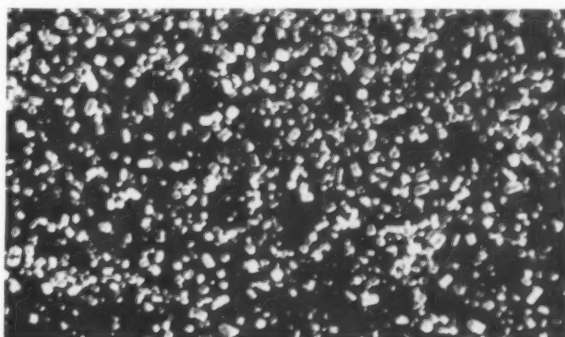
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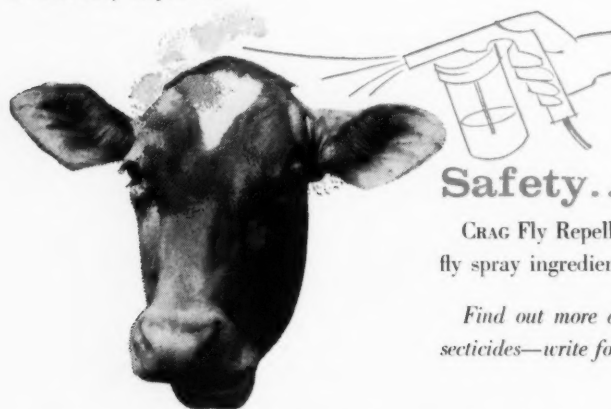
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SOAP and CHEMICAL SPECIALTIES

Automotive Chemical Specialties

... from the automobile manufacturer's view-point

By John M. Clark*

Mgr., Non-Metallic Materials
Manufacturing Research
Studebaker-Packard Corp.

PROBABLY no other automotive chemical is as potentially important as hydraulic brake fluids, since lives depend on the quality of these fluids. This has been pointed out so many times that repetition would only serve to underscore its over-all importance. Dr. Harold G. Lederer of R. M. Hollingshead Corp., Camden, N.J., addressed the automotive division on this subject at the 42nd annual meeting of C.S.M.A. last December. The subject has been discussed at every automotive engineering meeting. For example, Dr. B. E. Tiffany, of Ford Motor Company, read a paper before the annual meeting of the Society of Automotive Engineers, last January. Then followed a paper by C. M. Heinen, of Chrysler, before the Marketing Division of the American Petroleum Institute at the Detroit meeting on February 28. Three slides used by him appear on pages 146-7. They illustrate the concern of the automotive industry over fluids apt to vapor lock. A survey made by him showed that 29 out of 60 fluids were below the minimum SAE boiling requirements for moderate duty. Nine were suitable for moderate duty and 22 met the requirements of SAE heavy duty brake fluid. Since this survey was made in late 1955, these percentages are alarming. Furthermore, at the SAE Na-

tional Passenger and Car Body and Materials meeting on March 6, 1956, many comments were made to the effect that forthcoming cars of all makes will undoubtedly use wider tires with smaller wheels. This means that brake sizes will be reduced and cooling designs such as flared ribs will not be entirely feasible.

All of this, of course, means that the industry will need a fluid with the highest possible boiling point. If this cannot be developed jointly, it is reasonable to expect that we shall be using brake fluids based on mineral oil in the future, especially if the trend toward integrating hydraulic components continues. This trend depends on the public's fancy for long, low vehicles. It is a standing joke around Detroit that the power plant and drive line engineers always hope that the stylists remember that the engine is one of the component parts of a car and some space should accordingly be allotted.

Present specifications for heavy duty brake fluid place no restrictions on fluid color. It might be feasible and practical to require a standard color to identify heavy duty brake fluid and thus differentiate it from the moderate duty fluid which no automobile manufacturer uses in new equipment anyhow. This suggestion will have to be carefully considered by both

manufacturers and the SAE since any coloring material added for identification might have adverse effects on brake fluid stability. It is merely a suggestion for consideration to an industry group such as the chemical specialties manufacturers, etc.

Automotive Antifreezes

THE use of permanent antifreezes as factory fill materials apparently is growing. Studebaker adopted this policy in the winter of 1953-54, with Packard following in 1954-55. Several other companies preceded these two. The C.S.M.A. has done much to contribute to model legislation on this subject. Mr. Holsinger, of Socony Mobil Oil Company, New York and vice-chairman of the automotive division of C.S.M.A., last year discussed the activities of ASTM Committee D-15 on Engine Antifreezes. This committee is working on test methods and specifications and unanimously feels that the closer a laboratory bench test approximates cooling system operation in a vehicle, the more valid will be the test results. Therefore, the Glassware Corrosion Test now adopted under ASTM D1384-55T is but a step to a simulated service test followed by car performance. This committee, as well as its SAE counterpart, will have a tremendous job to do when cylinder blocks and radiators are made of aluminum alloys. The be-

* Paper presented at 42nd midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 21, 1956.

havior of some conventional inhibitor systems on aluminum alloys in a multi-metal cooling system cannot be predicted without extensive service tests. Such tests preferably should consider the erosion and cavitation possibilities of such inhibitor systems. These phenomena often destroy any surface film established by the inhibitor. Aluminum radiators and engine blocks will certainly be used when price so dictates.

Protective Coatings

PROTECTIVE coatings in the automotive industry would include those used on the metal and paint finishes. In the case of paint finish protectors, which are generally waxes, the big question has always been their comparative value. In other words the automotive industry would like to give the consumer his money's worth. Were I a manufacturer of such products, I would finish various sections of a car with my own and my competitors' formulations leaving an untreated area for comparison. After suitable exposure, car washing, and so forth, I would then make a series of stereo-color slides to show my prospective clients the merits of my product. Engineers and chemists in the automotive industry have always had questions

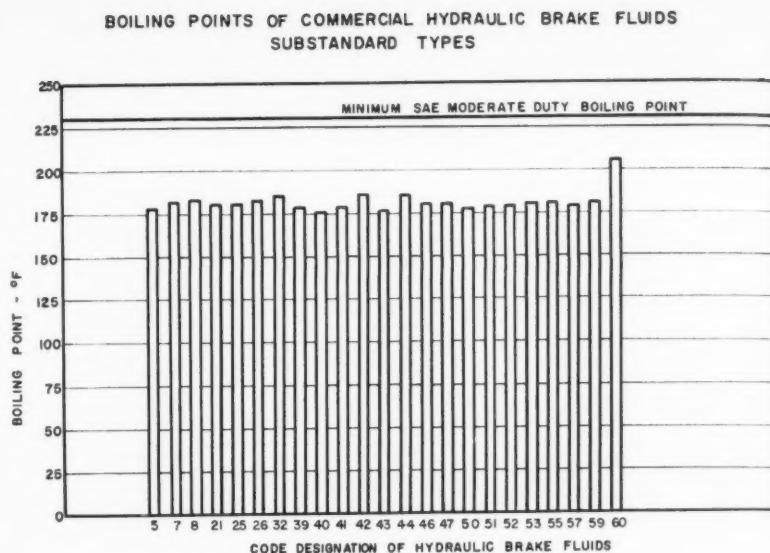


Figure 1

Courtesy Chrysler Corp.

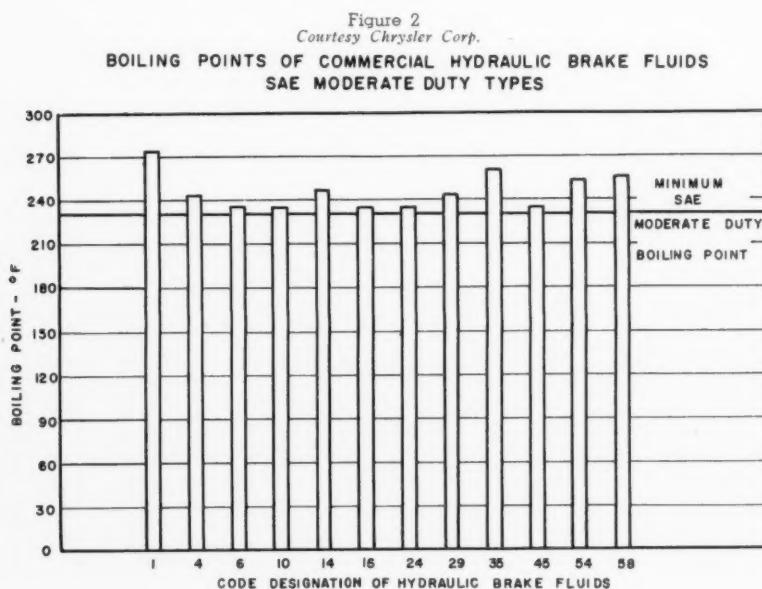
on test methods and evaluation procedures for such paint finish protectors.

The protection of chrome plate on bumpers and radiator grilles has always been an aim of the automotive industry. It is a common belief of car owners that the automotive manufacturer is always responsible for his dull or pitted finish. It must be realized that the conventional plating system does not cover complicated surfaces with a high degree of uniformity, and that the cost of com-

plete protection of many items is prohibitive. For this reason, chrome protectors have a definite place, especially in winter service. As a matter of fact, the industry needs a good clear finish for chrome use in the factory, as well as for service. A clear coating after 300 hours in the weather-ometer, which could be typical of most of the drying type finishes which we have seen, is shown in Figure 4. This particular composition is an acrylic modified alkyd baking enamel. As you can see it has flaked badly. If nickel metal again goes to war, or becomes scarce, a good protective coating would be needed very quickly.

How to obtain hard, durable exterior finish with the self healing metal protective qualities of the softer materials, I leave in the hands of the automotive specialties maker. It would be a neat trick if it could be accomplished.

One interesting sidelight on exterior protective coatings was the experience of our Packard division in storing cars adjacent to a foundry cupola. The air borne cast iron dust would settle on the paint finish, and cause localized rust spots. The problem was solved principally by spraying a wax composition heavily loaded with tripoli over the entire car. The presence of



BOILING POINTS OF COMMERCIAL HYDRAULIC BRAKE FLUIDS
SAE HEAVY DUTY TYPES

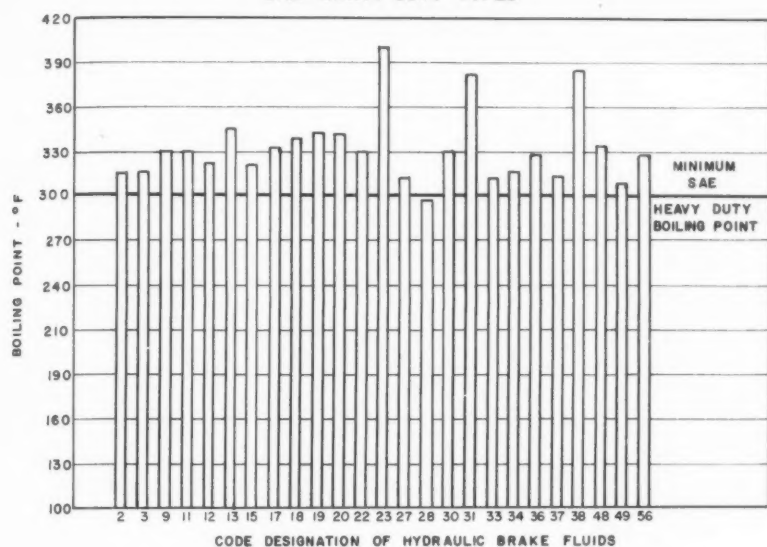


Figure 3.

Courtesy Chrysler Corp.

silicone compounds prevents wash off by rain, and the entire coating could be removed with a detergent solution. While the problem no longer faces our company, it could readily occur on any cars stored by dealers and distributors in heavily industrialized areas.

Anti-Smog Chemicals

CHEMICAL specialties manufacturers, should be aware of the tremendous concern over the contribution of vehicle exhaust gasses to smog. Originally, a problem peculiar to the Los Angeles basin, other areas of the country

are now showing concern, and many agencies, such as the Air Pollution Foundation, the federal government, and the Automobile Manufacturers Association are engaged in many programs to aid solution.

Basically, the automobile's contribution to smog are various unburned hydrocarbons, occurring largely on deceleration. The industry badly needs a chemical to place in the exhaust system, to remove these combustion products. Regeneration or replacement could be done at the service station level.

Figure 4.



The market potentials are astronomical, considering the automotive use in urban areas.

It is readily recognized that this chemical may not be a shelf item, and that the problem solution may be long and expensive. Several catalyst manufacturers, in fact, have tests under way on catalytic type mufflers.

I mention this project because it could be placed on the agenda of a chemical manufacturers "brain storming" session, to be reviewed occasionally in the light of new developments (for example—in ion exchange chemicals.)

The finding of this material represents one of the automotive industry's most pressing needs. I would suggest that anyone interested may obtain further information from Mr. G. J. Gaudaen of the Automobile Manufacturers Association, New Center Building, Detroit, Michigan.

Car Cleaners

INTERIOR car cleaners present few problems in automotive applications, since they are essentially the rug shampoos, detergents, and soaps commonly used in the home. Exterior cleaners and car wash soaps have caused some difficulty on gold anodized aluminum decorative trim. The Aluminum Company of America is watching this problem closely, and in various trade publications and letters to the automotive and cleaner manu-

(Turn to Page 173)



Operator unloads cans from American Can trailer at Bridgeport plant. Cans are packed upside down, 2 to a carton, 8 cartons to a bundle. Bundles are placed on pallets and moved to storage subsequent to use.

Cans are also received by Bridgeport in bulk pack as well as in reshipper cartons. Shown are Canco carriers and bulk cartons containing 6 ounce containers. Cans received in truck shipments of 40,000 units.

Bridgeport Brass Company's

Modern Aerosol Plant

AEROSOL packaging has made tremendous advances since Bridgeport Brass Co. introduced its "Blue Bomb" insecticide—the first aerosol product for the consumer market—just 11 short years ago.

Trade sources believe, nonetheless, that the potential market for aerosols has barely been opened.

Last year, U. S. aerosol sales

totalled some 230 million units with a retail value close to \$250 million, a figure aerosol enthusiasts expect to zoom to \$500 million by 1960. Pointing to the major strides pressure packages have registered since World War II, the industry has optimistically set its sights on a billion-dollar market by 1965. These hopes are pinned on the fact that Americans enjoy the conveni-

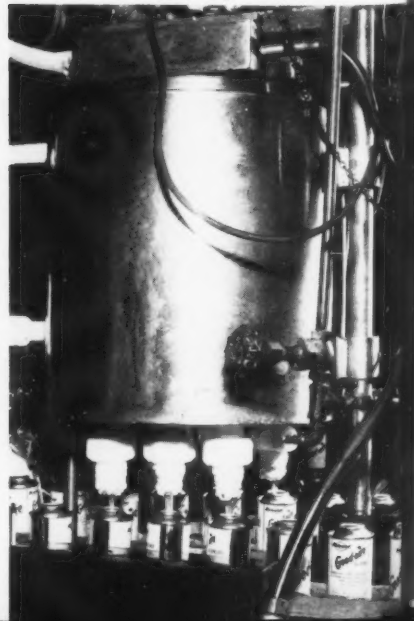
ence and effectiveness of push-button containers and are willing to pay for it.

"Convenience is the biggest factor in the packaging of any product in pressurized containers," according to Walter E. Anderson, sales manager of Bridgeport Brass Company's Aer-A-Sol division. "Our research department and those of the can-makers are constantly working in two directions:

Cans are fed into unscrambler at beginning of filling line. These "Good-aire" cans are going into single line operating at approximately 90 units per minute.



"Good-aire" cans are filled in three stages because of filling line speed. All nozzles are supplied from same storage tank. Product is filled at -30°F . so that all material will be liquid at atmospheric pressure.



(1) toward developing new applications for aerosol packaging in the food, pharmaceutical and cosmetics fields; and (2) promoting mechanical efficiency and formulation.

"A number of food products are already on the market. Perhaps the newest aerosol product is dry vermouth. Within a year or two, the U. S. consumer will be buying tomato catsup, mustard, seasonings, pancake batter, cake and dessert toppings and many other products in aerosol containers."

Bridgeport's research also is at work developing pressure packages for such products as tooth paste, spray-on bandages, perfumes, colognes, hand lotions, nail polish dryer and toilet waters.

One of the companies most responsible for the introduction and growth of the pressure package is Bridgeport Brass Co., a firm known the world over for its brass and copper products for other manufacturers, but without experience in packaging for consumer markets prior to World War II.

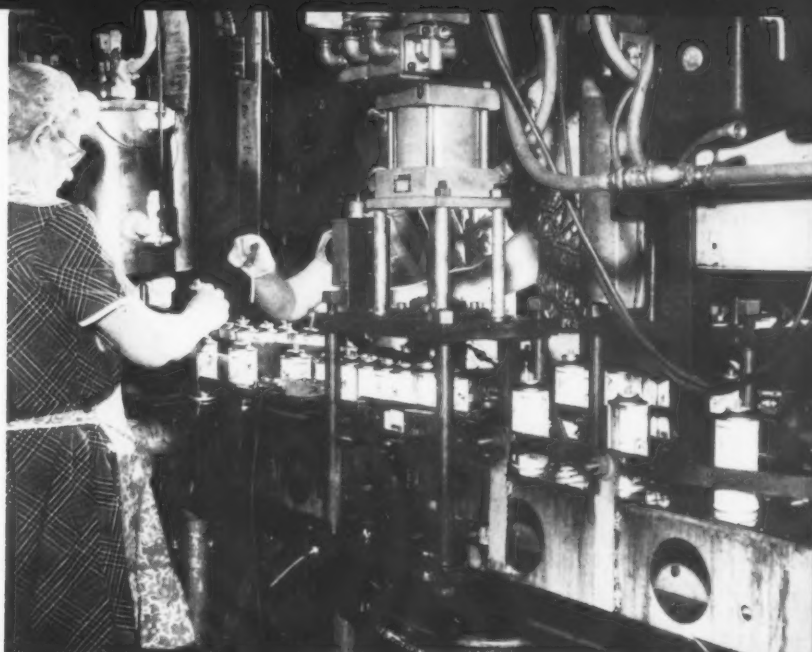
Bridgeport gained its first experience in aerosols in helping to meet one of the great wartime needs of the Armed Forces.

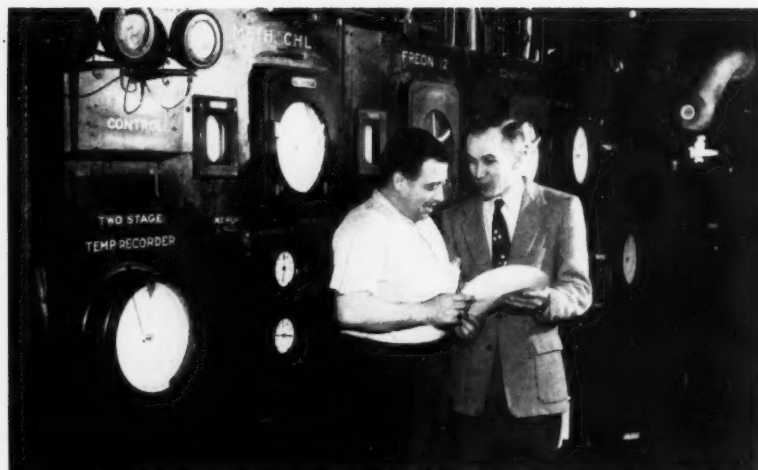
Dr. Thomas Midgley, Jr. of General Motors alerted researchers to the possibility of developing a liquid gas propellant to supply a can with built-in energy to dispense particles in an atomized spray.

After filling, operators (top) insert a valve-cup into container and it is crimped into place by capping machine (center). Note short distance between filling machine (left) and capper. This is to keep evaporation losses at a minimum as "Freon" begins to boil immediately after filling.

Filled unit is conveyed through a hot water test tank (center) in conformity with I.C.C. regulations. Can temperature is elevated to 130° F. and inspected for physical defects. At end of test, containers are removed and blown dry with air.

Weighing tests (bottom) to check for weight loss is part of constant laboratory vigilance maintained on production line at Bridgeport. Cans from each day's production are carefully weighed and put on shelf tests. Continual record is kept for one year. Each can is date coded and code is tied in with components and ingredients used on each day's production. This helps to establish a history on each product.





Mixing panel above is for blending aerosol mixes prior to filling at Bridgeport Brass. Instruments control flow of materials at predetermined rates. Vincent J. Blaine (right) production superintendent examines instrument chart with Michael Santone.

Some time later two researchers at the Department of Agriculture—Dr. L. D. Goodhue and Dr. W. N. Sullivan—developed the principle of the pressurized spray for insects.

In 1942, the Department of Agriculture developed an aerosol insecticide and asked Bridgeport Brass to help develop a container that would dispense the insecticide spray. The company improved the insecticide and developed the first aerosol container—a lethal looking package that was christened "Bug Bomb" and that was to save thousands of servicemen's lives.

Thus was born the vast aerosol empire. Bridgeport Brass was one of the first companies to produce the aerosol insecticide and was the first to redesign and present the armed forces units for sale for consumer and commercial use following the war.

The company's important role in the development of the aerosol included: market development, meeting new packaging requirements, the development of new highspeed filling lines, and constant research for the maintenance of high quality and safety standard.

Can and propellant manufacturers also played important parts in the forward progress of aerosol packaging. With the advent of low pressure packaging, the aerosol marketer required a container with a light metal body that

would sustain the lower pressure propellant and still meet I.C.C. shipping regulations. The present-day aerosol can is an adaptation of the beer can.

Canco more recently developed a new 16-ounce economy-size container, which has been adopted for several Bridgeport products. It offers decided improvements in the merchandising of aerosol products. The long body of the can gives packers opportunities for attractive lithographed labeling to better display their products on retailers' shelves.

The efficiency of the war-time "bug bomb"—more than 20 million units were delivered for military use—was responsible for the acceptance of the new aerosol bug killer by returning servicemen. Consumers, too, became aware of the product since it had received wide-spread publicity at the close of World War II.

Thus when Bridgeport Brass introduced its first product—"the Blue Insecticide Bomb"—in the Gimbels department store in New York on a rainy Monday afternoon in September, 1945, some 2,500 "bombs" were sold in just two hours. The first order of 10,000 units was quickly increased to 100,000.

Three years later, Bridgeport's low-pressure Aer-A-Sol insecticide was on the market, open-

ing the aerosol field to products that could be packed in disposable cans and priced for mass-distribution. This product was followed on the market the same year by "Good-aire," a spray room deodorant, and "Roach and Ant Killer."

Many Bridgeport products have been introduced since then. In 1949 came a "Moth Proofer," and in 1950 an "Aluminum Spray." A 12-ounce "Bug Bomb" was marketed in 1951 along with a home and shop "Clear Plastic Spray." Spray paints—"Black and White Gloss"—made their debuts in 1952, and the following year, "Vet-X," a pet insecticide spray was introduced.

Bridgeport Brass Co. extensively uses cans supplied by American Can Company. "We receive hundreds of thousands of cans a month from Canco," said Vincent J. Blaine, Bridgeport's production superintendent. "We are using cans with high dome tops and one-inch cup openings, an improvement over the one-piece top containers.

"The one-inch cup top is easier to close, and results in less spillage and propellant evaporation. The cans arrive at the plant in excellent condition. The topped can offers protection to the lithographed label."

The high-speed Bridgeport aerosol line today works as follows:

- The cans are placed at the filling line by fork truck. There they are placed on an unscrambler (Island Equipment Co.) and code-marked by a (Gottscho) machine.
- Then they are filled by a (Mojonnier Associates, Inc.) filler with first the concentrate, then the propellant that is refrigerated at -30 degrees F.
- The valve assemblies are manually inserted into the cans and the valve caps are crimped by a (Spalding) crimping head.
- The cans are automatically weighed and lightweights are rejected; they are spot checked by an inspector.
- Then comes the hot water test in which the temperature is

elevated to 130 degrees F. in accordance with I.C.C. regulations. The containers are visually inspected for physical defects. At the end of the test, the cans are removed from the water and blown dry.

- They are then test sprayed and a protective cap is applied over the valve.

- Finally, the cans are packed in the reshipper cartons; the cartons are automatically sealed, palletized and removed to warehouses for shipment.

Constant vigilance is maintained on the production line. Cans from each day's production are carefully weighed and put on shelf test. They are periodically weighed to check for weight loss. A continual record is kept for one year. Each can is date coded according to the components and ingredients used on each day's production, thus establishing a history on each product.

The company also maintains chemists constantly at work on aerosol research, as well as quality control people who work on all phases of quality for the various products.

Bridgeport, which for years had manufactured its own valves for the aerosol containers, abandoned this practice in 1956. "We decided it would be more economical to buy valves," said Mr. Anderson. "The economies were put to work in increased consumer advertising for Bridgeport products."

The company uses valves manufactured by Precision Valve Corp. of Yonkers, N. Y. and the Valve Corporation of America of Bridgeport.



Newest product in Bridgeport insecticide line, "Slug-a-bug" is discussed by Walter Anderson (right), aerosol products sales manager, and Vincent Blaine, production superintendent. Other products of the aerosol division are shown in foreground.

Both "Freon 11" and "12" and "Genetron" are used as propellants by Bridgeport, according to Mr. Blaine.

"Most insecticides are filled in a two-stage operation," he explained. "The concentrate, chilled to -10 degrees F., is filled into the can; then the propellant, chilled to -30 degrees F., is filled from a second tank. This method results in less evaporation loss of the propellant."

"The line is controlled by a panel board behind the filling line that has a spare relay ready to cut in and maintain production during an emergency," he added.

—★—

Bridgeport Firsts

BRIDGEPORT BRASS can proudly point to such noteworthy production achievements as the three-expansion chamber valve, the polyethylene dip tube,

and the first polyethylene spray head. It also developed the first refrigerated pre-mix filling line for low-pressure aerosol products and installed the first high-speed filling lines (120 cans per minute) in 1947.

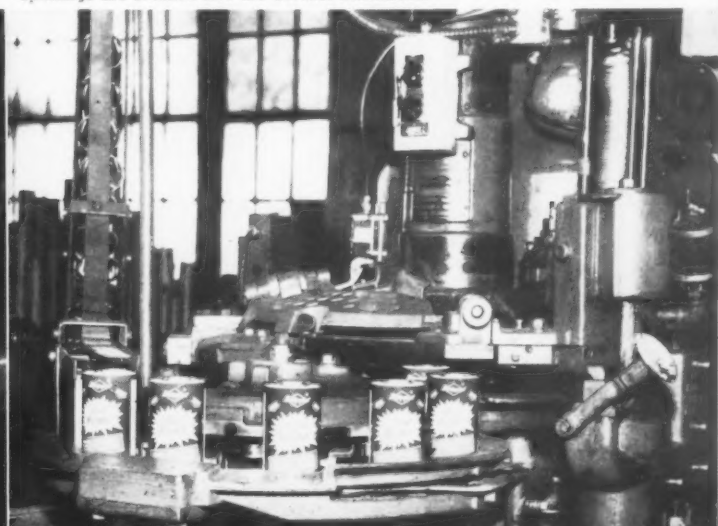
Production gains that have permitted a package for mass-market distribution, and constant advertising and promotional campaigns that have cost millions of dollars are important Bridgeport contributions to the growth of U.S. aerosol sales.

The company has stressed four objectives: product quality, package performance, effective distribution and a fair price in maintenance of its position among aerosol marketers.

These same points have made Bridgeport Brass a much sought after contract loader of aerosol products for other companies.

Aerosol insecticide cans for Bridgeport Brass Co. are shown entering double seamer machine at American Can's Hudson plant in

Jersey City. In this machine the high dome tops with one-inch cup openings are seamed into the aerosol containers.



Non-flammable Paint Strippers

Part III—Activators, Thickeners, Evaporation Retarders

By **Bernard Berkeley and Daniel Schoenholz**

Coatings Section—Product Development Department
Foster D. Snell, Inc., New York

and

Michael Skrypa*

Product Development Department
Solvay Process Division, Allied Chemical and Dye Corp., New York

IN previous articles (1, 2), we presented a comprehensive review of the art and the results of our studies covering the relative efficiencies of chlorinated solvents and binary solvent mixtures. We wish at this time to report on our investigations into the role of additives that are used in the formulation of non-flammable paint strippers.

The modern paint remover in its most comprehensive form is composed of the following types of materials: prime solvent, co-solvent, activator, thickener, evaporation retarder, corrosion inhibitor and emulsifiers in the case of the rinsable removers. It has been shown that the most efficient stripper solvent is methylene chloride, which in addition to its attributes as a remover is relatively non-toxic and completely non-flammable. Based on our own studies and those of other investigators, we can give credit to methyl alcohol as being the best general purpose co-solvent for use with methylene chloride. We shall specifically deal with activators, viscosity modifiers and evaporation retarders in the ensuing paragraphs.

Effect of Activators

THE purpose of activators in paint removers is to promote the rate of solvent action and induce greater lifting of the surface coating so that it may be more

readily removed. In general it may be said that the activator enhances penetration of the solvent into the protective film.

The merits of acids and water have been described by other investigators of whom the most quoted appears to have been L. E. Kuentzel and A. W. Liger (3). They reported that the addition of as little as 0.2 percent glacial acetic acid together with up to five percent water effectively improved the performance of methylene chloride. The use of amines as activators has been recommended by various manufacturers and is discussed in detail by C. W. Douglas (4). Among the alkaline ingredients described were: ammonia, monoethylamine, morpholine, mixed isopropanolamine and monoisopropanolamine.

The use of each type of activator introduces problems of sta-

bility and corrosion which as yet have not been completely overcome. Amines must be chosen with care since these materials tend to react with the chlorinated solvents in addition to staining many woods. The use of acids necessarily introduces the problem of corrosion of metals on storage.

For the purpose of this project, we restricted our studies to determining the relative action of acetic and formic acids and to determine the differences in performance among various amines.

Stripping tests were carried out on coated nails using the immersion technique described in a previous article. (1)

We show in Table I the effect of incorporating five percent of formic acid and glacial acetic acid in methylene chloride alone and in a methylene chloride-methanol solution.

Formic acid proved to be
(Turn to Page 157)

* Paper presented before the Aerosol Division during the 42nd midyear meeting, Chemical Specialties Manufacturers Association, Chicago, May 22, 1956.

Table I. Effect of Acid Activators—Removal Time, Seconds

Additive	% by Vol. Added	System	B-3 Air dry Phenolic	B-4 Baked Phenolic	D-6 Urea Melamine Varnish	F-2 Phenolic Primer	G-1 Shellac
		A-1 Polyvinyl acetate					
Methylene chloride	...	930	900 NR	900 NR	900 IR	900 NR	600 NR
Acetic acid	5%	600 IR	210 IR	900 NR	900 NR
Formic acid	5%	540	32	900 NR	900 NR
Methanol	5%	1020	90	900 NR	165 IR	900 NR	250 IR
Methanol	5%	180	22	41	54
Formic	2%						

IR = Incomplete Removal
NR = No Removal



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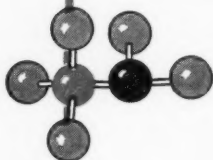
MONOMETHYLAMINE CH_3NH_2

Uses

Manufacture of amide and sulfonated amide-type detergents and surfactants. Synthesis of caffeine, aminophylline and desoxyephedrine. Manufacture of photographic chemicals, the explosive tetryl, amide-type plasticizers, ion-exchange resins, corrosion inhibitors and paint removers.

Properties

Molecular Weight	31.06
Boiling Point at 760mm, °C	- 6.79
Flash Point, Tag Open Cup, °F	34 (30% sol)
Density at 20°C	0.912 (30% sol)
Weight per U.S. Gallon at 68°F, lbs.	7.6 (30% sol)



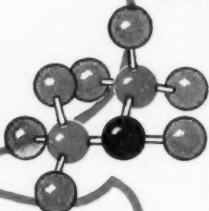
DIMETHYLAMINE $(\text{CH}_3)_2\text{NH}$

Uses

Raw material in manufacture of thiuram sulfide-type vulcanization accelerators and of dimethyldithiocarbamic acid salts used as fungicides. Neutralizing and solubilizing agent in preparation of concentrated solutions of 2,4-D salts. Manufacture of anti-malarials.

Properties

Molecular Weight	45.08
Boiling Point at 760mm, °C	6.88
Flash Point, Tag Open Cup, °F	54 (25% sol)
Density at 20°C	0.921 (25% sol)
Weight per U.S. Gallon at 68°F, lbs.	7.7 (25% sol)



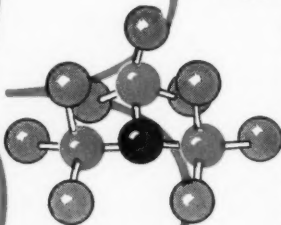
TRIMETHYLAMINE $(\text{CH}_3)_3\text{N}$

Uses

Preparation of long-chain quaternary ammonium compounds used as softeners, lubricants and waterproofing agents for textiles. Used with benzoyl peroxide to "set" methacrylate resins. Synthesis of cationic surface-active agents.

Properties

Molecular Weight	59.11
Boiling Point at 760mm, °C	2.87
Flash Point, Tag Open Cup, °F	38 (25% sol)
Density at 20°C	0.913 (25% sol)
Weight per U.S. Gallon at 68°F, lbs.	7.6 (25% sol)



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Table II. Effect of Varying Concentrations of Formic Acid on Removal Time in Seconds

Stock solution—95% methylene chloride, 5% methanol				
% Formic Acid Added	System A-1 Polyvinyl Acetate	System B-3 Air-dried phenolic	System D-6 Urea-Melamine	System G-1 Shellac
0.0	1020	90	165	250
0.1	960	66	111	215
0.5	180	51	87	84
1.0	180	25	47	57
2.0	180	22	41	54

(From Page 152)

better than acetic acid. This was particularly noticeable in our test on the air dried phenolic coating. The use of a combination of methanol and formic acid resulted in even better performance as would be expected due to the combined contribution of the cosolvent and activator.

In order to determine the range of optimum effectiveness for formic acid in methylene chloride-methanol mixtures, we tested a series of solutions in which the concentration of formic acid was varied from 0.0-2.0 percent. The results of those tests are described in Table II.

The optimum improvement in performance due to formic acid appears to be at about a level of 1.0 percent acid. This, of course, applies to the particular binary solvent mixture used. It is likely

that the optimum varies for different activators and other solvent mixtures. The optimum towards a given coating may be different from that for another class of coating.

Compatibility with Activators

A SERIES of experimental formulations were prepared with various acids and bases for the purpose of exploring the solubilities of possible activators. The results of those tests are itemized in Table III. It will be seen by examination of our observations that all of the amines tested, with the exceptions of the aqueous solutions, formed clear solutions with methylene chloride in combination with methanol. The caustic alkalies were not readily combined with methylene chloride despite the introduction of liberal quantities of alcohol.

The solvent combinations

Table III. Compatibility of Methylene Chloride with Potential Activators

Additive to Methylene Chloride	% by volume Added	Appearance of Solution after Preparation
Formic acid	0.5	Clear
Formic acid	2.0	Clear
Acetic acid, glacial	0.5	Clear
Acetic acid, glacial	2.0	Clear
Aqua ammonia, 26%	0.5	Clear
Aqua ammonia, 26%	2.0	Two layers
Aqua ammonia, 26%: methanol (1:5)	6.0	Slight haze
Aqua ammonia, 26%: methanol (2:5)	7.0	Two layers
Water	0.1	Clear
Water	2.0	Two layers
Water: methanol (2:5)	7.0	Two layers
Sodium hydroxide, 50% aq. soln.: methanol (1:10)	5.5	Two layers
Lithium hydroxide, 10% aq. soln.	0.5	Two layers
Lithium hydroxide, 10% aq. soln.: methanol (1:10)	5.5	Two layers
Sodium hydroxide, 10% in methanol	0.5	Slight haze
Sodium hydroxide, 10% in methanol	2.0	Two layers
Potassium hydroxide, 10% in methanol	0.5	Slight haze
Ethyl amine, 70% aq. soln.: methanol (2:5)	7.0	Slight haze
Isopropyl amine: methanol (1:1)	10.0	Clear
Diethyl amine: methanol (1:1)	10.0	Clear
Triethyl amine: methanol (1:1)	10.0	Clear
Monoisopropanol amine: methanol (1:1)	10.0	Clear
Mixed isopropanol amine: methanol (1:1)	10.0	Clear
Diethanolamine: methanol (1:1)	10.0	Clear

shown in Table III were tested for stripping efficiencies by immersion technique on five difficult to remove coatings.

Baked phenolic oleoresinous paint	System B-4
Nitrocellulose lacquer	System E-1
Cellulose acetate butyrate lacquer	System E-4
Modified phenolic primer	System F-2
Polyvinyl butyrate primer	System F-5

Of the above described coatings, the only one which could be removed within 15 minutes was nitrocellulose lacquer. We show in Table IV the wrinkling times for various solvent combinations on this coating.

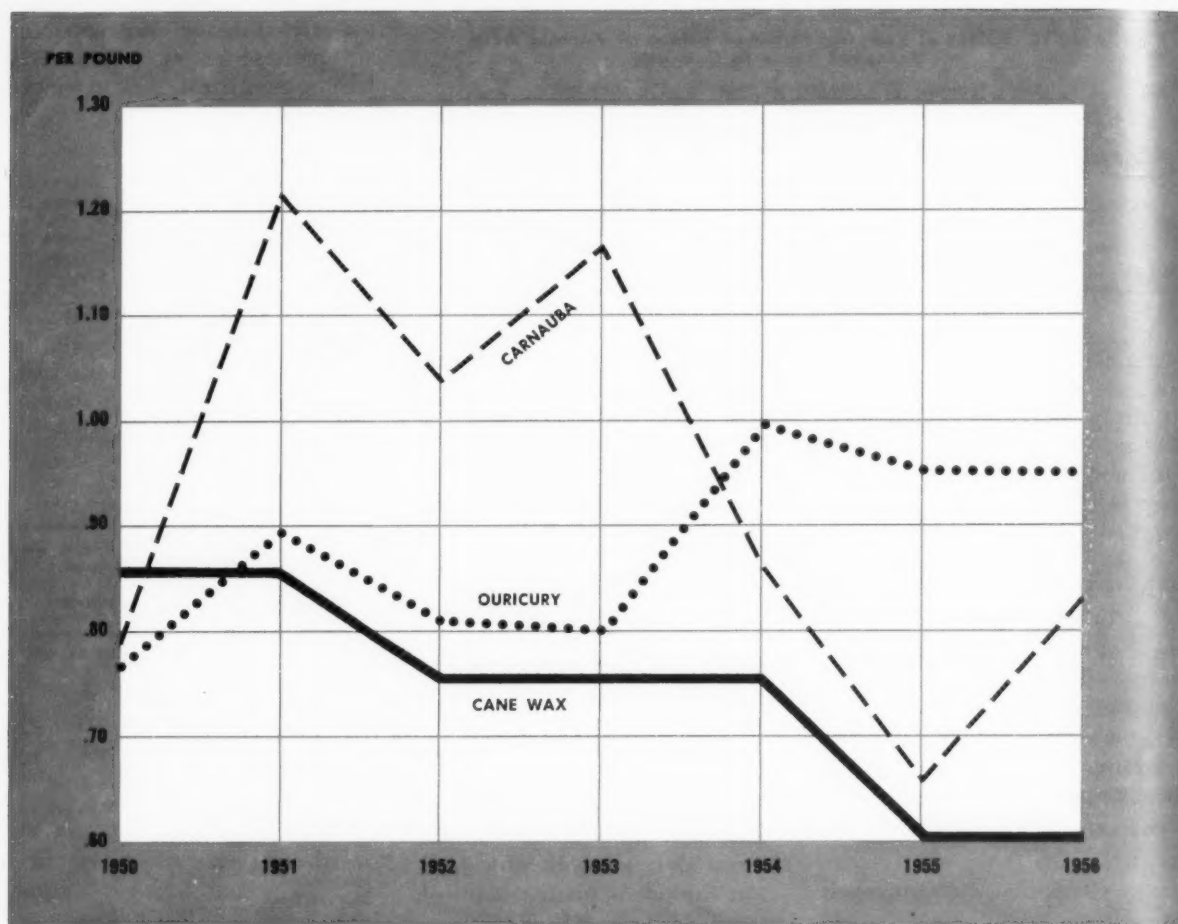
Table IV. Stripping Time on Nitrocellulose Lacquer

Composition	Observation
Methylene chloride 95	No removal after 15 min.
Methanol 5	11 min.
Methylene chloride 94	
Methanol 5	
Aqua ammonia, 26% 1	4 min.
Methylene chloride 93	
Methanol 5	
Ethyl amine, 70% 2	
Methylene chloride 90	3 min.
Methanol 5	
Isopropyl amine 5	
Methylene chloride 90	3 min.
Methanol 5	
Diethylamine 5	
Methylene chloride 90	10 min.
Methanol 5.0	
Triethylamine 5	
Methylene chloride 94.8	Partial removal after 15 min.
Methanol 5	
Sodium hydroxide, 10% in methanol 0.2	
Methylene chloride 94.8	Partial removal after 15 min.
Methanol 5.0	
Potassium hydroxide, 10% in methanol 0.2	
Methylene chloride 94.0	Partial removal after 15 min.
Methanol 5.0	
Formic acid 1.0	

Thickeners in Paint Strippers

THICKENERS in paint removers serve the function of maintaining a film of stripper on inclined and vertical surfaces. The film acts as a reservoir from which solvent can be drawn into the coating. In order to assure maximum wrinkling and lifting it is necessary that sufficient solvent be present to saturate the coating.

A satisfactory thickener should have the following characteristics: impart high viscosity at



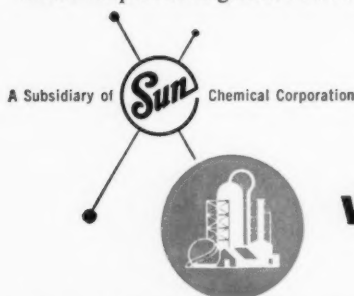
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Table V. Compatibility of Thickeners

Trade Name	Manufacturer	Description	2% Thickener Added		
			Methylene Chloride	90 pts. Methylene Chloride 10 pts. methanol	85 pts. Methylene Chloride 10 pts. methanol 5 pts. Water
CMHEC	Hercules Powder Co.	Carboxymethyl hydroxy-ethyl cellulose	I	I	Sl. gel
PVM/MA	Gen. Aniline & Film Corp.	Copolymer methyl vinyl ether and maleic anhydride	Cl	Cl	Sl. gel
Goodrite K710	B. F. Goodrich Chem. Co.	Sodium salt of polyacrylic acid	I	I	Sl. gel
Goodrite K707	B. F. Goodrich Chem. Co.	Ammonium salt of polyacrylic acid	I	H _z	H _z Cl; low visc.
Gelva C-3, V-30	Shawinigan Prod. Co.	Polyvinyl acetate	Low visc.	Low visc.	
EHEC-3U	Hercules Powder Co.	Ethyl hydroxy ethyl cellulose	Low visc.	Low visc.	Cl; low visc.
Bentone 34	National Lead Co.	Dodecyl ammonium bentonite	Low visc.	Med. visc.	Low visc.
Cellulose acetate TH-4	Hercules Powder Co.	Cellulose triacetate	Med. visc.	Med. visc.	
Cellulose acetate TH-5	Hercules Powder Co.	Cellulose triacetate	Med. visc.		Med. visc.
Cellulose acetate WH-2	Hercules Powder Co.	Cellulose acetate, 58.4-59.0% combined acetic acid	Low visc.	Low visc.	Med. visc.
Methocel, 4000 cps.	Dow Chem. Co.	Methyl cellulose	Cl; sl. gel	High visc.	High visc.
Methocel 2602	Dow Chem. Co.	Methyl cellulose	Low visc.	High visc.	Cl; high visc.
Ethocel K5000	Hercules Powder Co.	Ethyl cellulose	High visc.	High visc.	Cl; high visc.
Hercose S, med. visc.	Hercules Powder Co.	Cellulose acetate sorbate	I	Low visc.	Cl; low visc.

Key: I = Insoluble particles. Sl. gel = Particles slightly swollen. Cl = Cloudy, opaque solution. H_z = Hazy solution. Low visc = Low viscosity. Med. visc. = Medium viscosity. High visc. = High viscosity.

low solids concentration; be compatible with the blended composition; maintain uniform viscosity during storage; form a soft non-adhering film upon drying.

An ideal thickened system would be one that exhibits thixotropic properties, that is, be fluid during application and viscous immediately thereafter.

Examples of diverse types of materials, which have been reported in the literature as being suitable for increasing the viscosity of paint removers, are shown below:

Inorganic fillers—Whiting, fullers earth, magnesia, infusorial earth, talc.
Inorganic thickeners—Bentonite.
Semi-organic thickeners—Bentone, metallic soap.
Organic fillers—wood flour, fish scales.
Organic thickeners—Starch, crepe rubber, zein, casein, cellulose acetate, cellulose nitrate, cellulose propionate, cellulose butyrate, cellulose acetopropionate, cellulose acetobutyrate, cellulose ethers, polyacrylate esters, copolymers of styrene and methyl acrylate.

The more important thickening agents, from the standpoint of general use, are the cellulose derivatives, i.e., methyl cellulose, ethyl cellulose, cellulose acetate and nitrocellulose. Of these cellulose derivatives, methyl cellulose is the only one that finds practical application in flush-off formulations.

Compatibility of Thickeners

IN order to extend the present knowledge of thickeners for use in methylene chloride paint removers we performed a series of compatibility tests on possible viscosity modifiers. Included among the thickeners were some of the relatively new cellulose derivatives such as carboxy methyl hydroxy ethyl cellulose (CMHEC), ethyl hydroxy ethyl cellulose (EHEC), cellulose acetate sorbate (Hercose "S"), and a propylene derivative of methyl cellulose.

The thickeners were checked for behavior in methylene chloride, a combination of methylene chloride and methanol, and a mixture of methylene chloride, methanol and water. A summary of the test results is given in Table V.

Based on the results of the

Table VI. Effect on Viscosity Due to Variation in Thickener

(Viscosity by Gardner-Holdt Bubble Tubes)			
General Formula	% Weight		
Methylene Chloride	84.5-86.0		
Methanol	9.5		
Paraffin Wax	3.0		
Thickener	1.5-3.0		
% Thickener	1.5	2.5	3.0
Ethyl cellulose K-5000+	A-3	H	—
Cellulose acetate TH-5	—	A-5	A-4
Cellulose acetate WH-2	—	A-5	A-5
Methyl cellulose 4000 cps	W	>Z	

compatibility tests it was decided to limit our studies to methyl cellulose, cellulose acetate and ethyl cellulose. However, in the event that EHEC and Hercose "S" become available in higher viscosity grades the use of these materials in flush-off removers should be examined. Methocel 2602, which is a propylene derivative of methyl cellulose, has recently become available. On the basis of the limited tests conducted on this material we believe that this product deserves further careful study. It is considerably more soluble and exhibits higher viscosities in methylene chloride than methyl cellulose.

Viscosity vs. Concentration

LABORATORY samples, based on a typical paint remover composition, were prepared in which the thickener was varied from 1.5-3.0 percent by weight concentration. The viscosities of the solutions were measured by the Gardner-Holdt Bubble Tubes at 75°F. The results are given in Table VI.

It is immediately evident from the data that methyl cellulose and ethyl cellulose provide the highest viscosity on an equivalent weight basis. The results of a com-

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Table VII. Comparisons of Thickeners on Equivalent Cost Basis*

Methocel, 4000 cps	0.75	1.0	—	—	—
Ethyl Cellulose K-5000+	—	—	1.0	1.34	—
Cellulose Acetate WH-2	—	—	—	—	1.5
Methylene Chloride	91.75	91.5	91.5	91.16	91.0
Methanol	6.00	6.0	6.0	6.00	6.0
Paraffin Wax (m.p. 125°F)...	1.50	1.5	1.5	1.50	1.5
Viscosity, Gardner-Holdt ...	100.00	100.0	100.0	100.00	100.0
Viscosity, No. 4 Ford Cup, sec.	<A	<A	<A	<A	<A
	10	14	15	20	17

*Ethyl Cellulose K-5000+ 68¢/lb.
Cellulose Acetate WH-2 46¢/lb.
Methocel, 4000 cps. 90¢/lb.

parison of thickeners on an equivalent cost basis carried out by another group are shown in Table VII.

Viscosity as a Function Of Solvent Base

THE viscosity characteristics of a thickener in non-flammable paint removers is largely a function of its behavior in methylene chlo-

on viscosity when increasing proportions of a polar solvent, such as methanol, are combined with methylene chloride.

At a one percent thickener concentration, Methocel, 4000 cps. requires between six and nine percent methanol in order to become sufficiently hydrated to significantly influence the viscosity of the solution. Ethocel K-5000+ is adversely affected by minor additions of methanol. Solutions containing

Table VIII. Effect on Viscosity Due to Variation in Solvent Base

(Viscosity in Seconds—No. 4 Ford Cup)
(1% thickener used)

Ratio of Methylene Chloride: Methanol

	97.5/0	94.5/3.0	91.5/6.0	88.5/9.0
Methocel 4000 cps.	9	9	14	34(C+)
Ethocel K-5000+	71(H)	15	15(>A)	14
Cellulose Acetate TH-4	—	10	10	10
Cellulose Acetate WH-2	10	10	10	10

Data in parenthesis are in terms of Gardner-Holdt Viscosity.

ride. However, the influence of the co-solvent can become an important factor in the event that the thickener is over balanced either in the direction of being actively hydrophilic, as in the case of methyl cellulose, or essentially hydrophobic, as for example ethyl cellulose. To illustrate this point, we show in Table VIII the effect

Cellulose Acetates TH-4 and WH-2 exhibit no change in viscosity up to nine percent methanol.

The difference in viscosity behavior between ethyl cellulose and cellulose acetate can further be illustrated by examining the data in Table IX.

Viscosity modifiers employed in flush-off type paint strippers must

Table IX. Effect on Viscosity Due to Variation in Co-Solvent

(Viscosity in Seconds — #4 Ford Cup)

General Formula

Methylene Chloride	91.5%
Paraffin Wax, mp 125°F	1.5%
Thickener	1.0%
Co-solvent	6.0%

Co-solvent	Ethyl Cellulose K-5000+	Cellulose Acetate WH-2
6% Methanol	15	10
3% Methanol	—	—
3% Toluol	45	9.5
3% Methanol	—	—
3% Mineral Spirits	19	9.5
6% Toluol	185	10

basically be either water soluble or at least water dispersible in the presence of emulsifying agents. Previous experience with thickeners other than methyl cellulose leads us to conclude that generally unsatisfactory flush-off results are obtained with materials such as ethyl cellulose, cellulose acetate and nitrocellulose.

Methyl cellulose itself, which exhibits a fair degree of water solubility, must be used in conjunction with surface-active agents in order to attain complete rinsability.

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- 4) Douglas, C. W., "The Development and Evaluation of Paint Removers Used by the United States Air Force," AF Technical Report 5713, 13 July 1948.

CSMA Floor Care Folder

Protective coatings, utilized for maintenance of large floor areas in institutional and commercial buildings, are discussed in a new, eight-page pamphlet made available by the Chemical Specialties Manufacturers Association, 50 East 41st St., New York 17, N. Y., it was announced recently.

Prepared by the scientific committee of the association's Waxes and Floor Finishes Division, the pamphlet includes tips on care of asphalt tile, concrete, cork, linoleum, magnesite, marble, rubber, terrazzo, clay-ceramic tile, vinyl, and wood floors. Single copies are available free of charge from CSMA. Copies are also available in quantity at nominal cost.

The new folder on general floor care is the second to be issued by the Waxes and Floor Finishes Division of CSMA. Waxing of vinyl floors was covered in a manual issued in 1953, copies of which are still available.

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Precautionary Labeling

...What to declare

"... everything legally required; everything necessary for safeguarding those handling and using the product; everything necessary for the protection of the peace of mind and profit of the manufacturer."

By A. Haldane Gee, Ph.D.*

Foster D. Snell, Inc.
New York, N. Y.

This month we present the second part of a discussion of labeling. Last month, John D. Conner, general counsel of the Chemical Specialties Manufacturers Association, discussed the various aspects of "Mandatory Labeling of Insecticides and Disinfectants." The author of this month's article on warning labels is chairman of the precautionary labeling committee of the Chemical Specialties Manufacturers Assn. He is director of bacteriology and toxicology of the chemical and engineering consulting firm of Foster D. Snell, Inc., New York.

THERE are two approaches to the problem of drafting precautionary label statements for a chemical specialty — one negative, one positive, and both good.

The negative approach is common with manufacturers studying some of the new legal requirements for the first time — that declaring is scaring. The positive approach comes a little later — that of learning and discerning. The time to start getting all the facts is during the first phase. The

time to write the label copy and warnings is during the second phase. Then frequently a seemingly burdensome obligation may be turned to surprising advantage.

Manufacturers of disinfectants and insecticides have an advantage in the new precautionary labeling climate in that useful weather signs and storm warnings have been worked out that will assure reasonably smooth sailing for a product sold interstate. Such products must be registered with the United States Department of Agriculture under the Federal Insecticide, Fungicide and Rodenticide Act. Regulations for the enforcement of this act state how some of the hazards are to be determined, and what must be said about them on the labeling.

There is a reason for this prior pattern of review, testing when desirable and enforcement where necessary. The products controlled by this act are intrinsically poisonous — for insects or for rats or for microorganisms. The regulations are for the protection of those handling or exposed to such materials since they may all be potentially dangerous to man. The regulations stipulate also that consideration should be given to possible second order damage and

its prevention — avoiding residues on foods, ill effects on farm animals and pets, harm to fish and wildlife, damage to useful plants.

These considerations are set forth in Interpretation 18, Revision 1 of which appeared in the *Federal Register* of December 21, 1954. The official title is "Interpretation with respect to warning, caution and antidote statements required to appear on labels of economic poisons." These regulations take cognizance of any fire hazard as well as of the toxic effects of the economic poison.

Revision 1 lists 112 recognized economic poisons or variations, with specific warning statements and suggested antidotes. In view of these provisions, little difficulty would appear in the way of labeling recognized formulations legally and adequately, so that equivalent products sold across state lines should have reasonably comparable label statements.

In actual practice, the situation is not this simple, for a variety of reasons. Revision 1 of Interpretation 18 recognizes the problem of formulations with special ingredients that may require warning statements in addition to those recommended; the concentration of the active agent must usually be considered; the properties of the

*Paper presented before a joint meeting of the Disinfectants and Sanitizers Division and the Insecticide Division, 42nd midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 22, 1956.

...about detergents

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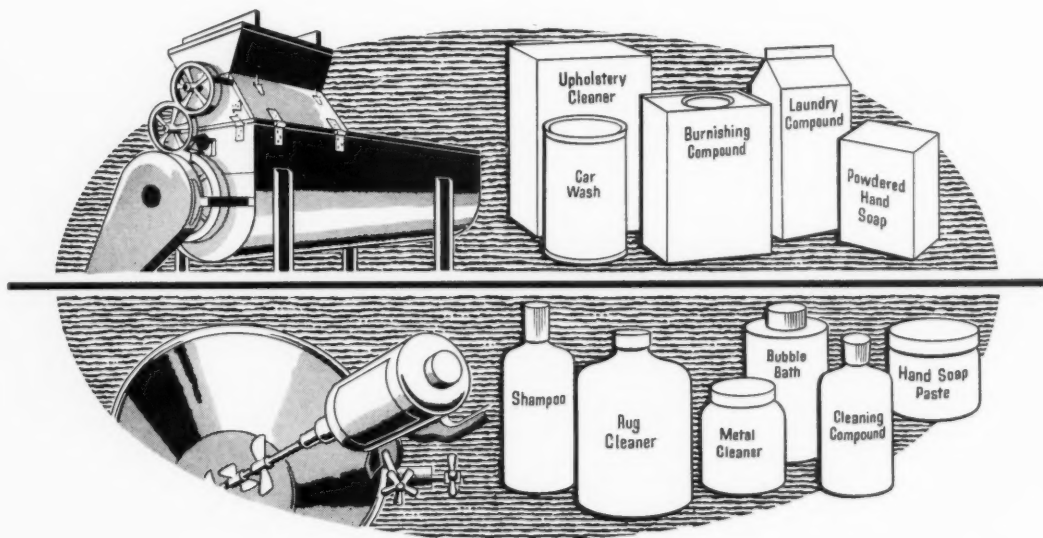
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vehicle or dispersing agent may require special wording.

A dual purpose mixture may present a special problem, as in the case of a cleaning and disinfecting formulation, which will come under the economic poisons act when disinfectant action is claimed, but the presence of the additional ingredient may change the relative toxicity. The second ingredient is not necessarily toxic, but is at least potentially irritating.

A new method of packaging may change the whole situation. Revision 1, for example, gives a caution statement for an aerosol preparation of DDT, although this caution alone would not be regarded as adequate for a pressure packaged product of any kind.

A further complication, and one that is receiving considerable attention, is the passage, by more and more states, of hazardous substances laws that differ widely in their definitions and provisions. The tendency is to place the onus on the manufacturer in the event his material is alleged to be harmful, and the methods by which harmfulness is to be proven are not too well defined.

Extreme View

AN extreme view of the trend of legislation is the suggestion that many chemical specialties although not foods, not drugs and not cosmetics, must nevertheless meet some of the requirements for such products sold interstate. A detergent sanitizer that comes in frequent contact with the hands, although not intended to benefit the hands, should not injure them, hence should be non-irritating. An aerosol product that may be inhaled frequently and for prolonged periods must be at least no more dangerous than an anesthetic vapor — and, of course, should have no anesthetic effect under any ordinary conditions of use. Any specialty that may be ingested, alone and by accident, or mixed with other things and taken unknowingly, is entitled to be regarded as a form of dangerous food. But the

ultimate extension of this reasoning would be to require practically every substance to carry the warning label "poison" and probably also "explosive" — including even water.

What to Declare

UNDER these circumstances, what does one declare on the label? The answer can be threefold: (1) everything legally required; (2) everything necessary for the safeguarding of those handling and using the product and, (3) everything necessary for the protection of the peace of mind and profit of the manufacturer.

Confronted with these objectives, the manufacturer will frequently find that he is faced with decisions that require due consideration, full knowledge of the product, the exercise of good judgment, and the need for salesmanship and merchandising methods that will convince consumers that the product is safe and useful, even though it does require the exercise of caution in storage and in use.

On fire and explosion hazards, there is some lack of uniformity between federal, state and municipal requirements. The tests necessary to determine the status of a product are, however, relatively simple and seldom time-consuming. A manufacturer may have to decide about divided markets or dual labeling, however, where jurisdictions or requirements conflict.

On hazards to property other than by fire or explosion, an excellent approach is to test the directions for use thoroughly, and to anticipate every possible misinterpretation or wrong application. It will seldom be sufficient to cover all such contingencies with a label disclaimer, although it may help.

On hazards to persons, Interpretation 18 will apply specifically in some cases, and can be used as a guide in many others, including the evaluation of products other than economic poisons. It contains an eminently practical approach to the problem of ascertaining how toxic a modified formu-

lation or even completely unknown new ingredient is likely to be.

The key index is the effect of single doses of the product, of stipulated size, on specified animals, the doses being given orally, percutaneously and by inhalation, with the dose levels being adjusted according to the route of administration. The criterion that determines the toxicity category into which the product falls is the ratio of deaths to survivals following the dosings. It is customary to observe the animals for ten days after the dosing. Deaths taking place at a later time, if attributable to the effects of the product, must be counted also. Duly authenticated records of the effects on humans will, in most instances, however, take precedence.

Four Hazard Categories

FOUR categories of hazard are recognized, equivalent to highly toxic, moderately toxic, slightly toxic and comparatively non-toxic. A rule of thumb among toxicologists is that a product, toxic in a single dose at one level, can be tolerated in ten doses, one each day, each one tenth the amount of the single dose. Doses one tenth smaller again can probably be tolerated for longer periods. In the cases of vapors, the duration of exposure must be taken into account also. In situations where frequent exposure is likely, however, it is desirable to conduct a test with frequent exposures, although these may be at exaggerated levels also.

It is only by such procedures that a firm basis can be established for appraising a new product or mixture, and for preparing supportable label copy. In many cases, however, it is not necessary to go the entire course. If a similar product or formulation is available that is better known, then frequently comparative tests of the two will suffice, assuming the expected pattern of results emerges.

The manufacturer who is willing to approach realistically the problem of precautions, will fre-

(Turn to Page 173)

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Evaluation of

Iodine Sanitizing Solutions

By Bernard Witlin and Louis Gershenfeld*

Philadelphia College of Pharmacy and Science

Part II

III. Germicidal Efficiency Testing

A) The Black and Weber Method for Evaluating the Germicidal Efficiency of Sanitizing Solutions has been applied employing two different test bacteria, *Escherichia coli* A.T.C.C. -11229, *Micrococcus pyogenes* var. *aureus* F.D.A. 209, A.T.C.C. 16538 and each at three different temperatures, 5°C., 20°C. and 37°C.

The iodine sanitizing solutions employed in the previous experiments were used. Sodium hypochlorite solutions were run as a control.

The results are recorded in Table IV. It was noted that iodine was effective not only at the higher temperatures but also in the cold (5°C.). The iodine preparations were more effective in all instances than was chlorine (from sodium hypochlorite).

B) Experiment III (A) was repeated, employing the U.S.P.H.S., Robert A. Taft Sanitary Engineering Center Modification of the Black and Weber Procedure for Evaluating the Germicidal Efficiency of Sanitizing Solutions.

This procedure specifies "That the germicide test mixture shall initially contain from 75,000,000 to 125,000,000 test bacteria per ml." This is the same concentration as employed in the original Black and Weber technique, and differs only in the method of preparing the culture suspension and the temperature at which the test

bacteria suspensions are stored prior to testing.

The results are recorded in Table V.

Summary and Conclusions

1) A comparative study of the bactericidal efficiencies of Iodine Tincture (U.S.P.XV), Iodine Solution (N.F.X), various commercially available iodophors, and other preparations containing free iodine with or without phosphoric acid and recommended for use in sanitization procedures was conducted. Chlorine (from sodium hypochlorite solution) was employed as a control in M/15 phosphate buffer solution (pH 8.0)

and in distilled water.

Various capacity testing methods were employed, using *Micrococcus pyogenes* var. *aureus* 209 and *Salmonella typhosa* (Hopkins) as the test organisms at three different temperatures: 5°C., 20°C. and 37°C.

Hydrogen-ion concentration determinations were made on each dilution of sanitizing solution under test, on each test bacterial culture, and on each increment and mixture thereof.

These capacity tests were repeated employing one percent whole milk as the diluent for the sanitizing solutions.

In all capacity test methods,

Table IV. The Black and Weber procedure for evaluating the germicidal efficiency of sanitizing solutions

p.p.m. required at minimum time
15 seconds for 99.9999% killing
(approximately 100,000,000 test bacteria/ml.)

Sanitizer	Test Organism	5°C	20°C	37°C
A	E. coli	20	15	25
B		20	15	25
C		20	15	25
D		20	15	25
E		20	15	25
F		20	15	25
G		65	50	65
H		65	50	65
A	M. pyogenes var. aureus	15	5	20
B		15	5	20
C		15	5	20
D		15	5	20
E		15	5	20
F		15	5	20
G		50	15	65
H		50	15	65
A	S. typhosa	15	10	25
B		15	10	25
C		15	10	25
D		15	10	25
E		15	10	25
F		15	10	25
G		65	50	65
H		65	50	65

*Presented at the 56th General Meeting, Society American Bacteriologists, May 2, 1956, Houston, Texas.

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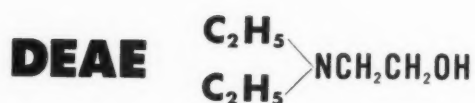
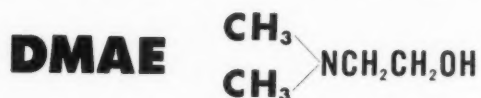
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Table V. U.S.P.H.S., Robert A. Taft Sanitary Engineering Center modification of the Black-Weber method of evaluating the germicidal efficiency of sanitizing solutions

p.p.m. required at minimum time
(15 seconds) for 99.9999% killing
(approximately 100,000,000 test bacteria/ml.)

Sanitizer	Test Organism	5°C	20°C	37°C
A	<i>E. coli</i>	15	10	25
B		15	10	25
C		15	10	25
D		15	10	25
E		15	10	25
F		15	10	25
G		25	15	50
H		25	15	50
A	<i>M. pyogenes</i> var. <i>aureus</i>	15	5	20
B		15	5	20
C		15	5	20
D		15	5	20
E		15	5	20
F		15	5	20
G		25	10	50
H		25	10	50
A	<i>S. typhosa</i>	15	10	25
B		15	10	25
C		15	10	25
D		15	10	25
E		15	10	25
F		15	10	25
G		25	15	50
H		25	15	50

iodine- and iodophor-phosphoric acid sanitizing solutions exhibited greater bactericidal efficiency than did iodine preparations not containing phosphoric acid in their formulas.

In all above instances, iodine-phosphoric acid solutions and other solutions containing free iodine were more efficient than chlorine at all three temperatures used (5°C., 20°C., 37°C.).

The capacity test method in which the most consistent and reproducible results were obtained was the one employing 5 ml. of sanitizer dilutions and 0.2 ml. of a culture of test organism (a 1:25 ratio) in the performance of the test. This technique is a most rigid procedure, but nevertheless reveals very effectively the greater efficiency of iodine as a sanitizing agent as compared with chlorine.

In the capacity test now recommended by the U. S. Department of Agriculture (10 ml. of sanitizer + 0.05 ml. of bacteria), 50 p.p.m. of chlorine diluted with water did not kill the test bacteria in most instances even in one increment at the three temperatures (5°C., 20°C., and 37°C.). Iodine in

even weak concentrations (10 p.p.m.) was effective in most instances against one increment at all temperatures.

The tables and graphs show the dilutions of the various sanitizing solutions which will kill the bacteria in from one to 10 of the increments as employed in each capacity test at the three temperatures employed.

2) Employing a capacity test method, 5 ml. portions of the respective concentrations of iodine and iodophor sanitizing solutions, 10 individual 0.2 ml. increments of the test bacteria were added (a ratio of 1:25 of test bacteria to sanitizing solution) at minute and a half intervals. Concentrations of the sanitizing solutions were increased until a sufficient amount of free iodine was available to kill the test organisms in all 10 increments.

At 5°C., 20°C., and 37°C. the selected iodophors and the iodine-phosphoric acid sanitizers killed all of the test bacteria in the first increment at 6 p.p.m. with the exception of *Micrococcus pyogenes aureus* at 5°C. where 25 p.p.m.

were required. Chlorine solutions prepared from sodium hypochlorite with distilled water at 20°C. required 575 p.p.m. available chlorine, and 100 p.p.m. when prepared with M/15 phosphate buffer solution (pH 8.0). Tincture of Iodine U.S.P.XV and Iodine Solution N.F.X required 25 p.p.m. with both test organisms at all three temperatures.

To kill all 10 increments of the test bacteria in this rigid technique, the iodine-phosphoric and sanitizers and iodophors required 300 p.p.m. Iodine Tincture acid Iodine Solution required 360 p.p.m. free iodine to kill all 10 increments of both test bacteria at 20°C. and 400 p.p.m. at 37°C. and at 5°C. With both test bacteria chlorine in distilled water required 2400 p.p.m. at 37°C. and 4000 p.p.m. at both 5°C. and 20°C. With M/15 phosphate buffer, chlorine required 1000 p.p.m. to kill 10 increments of *Salmonella typhosa* at 5°C. and 20°C., but required 900 p.p.m. at 37°C., and with *Micrococcus pyogenes* var. *aureus* it required 1050 p.p.m. at 5°C. and 20°C., but 950 p.p.m. at 37°C.

3) The capacity test method was repeated with 10 ml. of the sanitizing solutions with 0.2 ml. of a culture of test bacteria (a 1:50 ratio) and with 0.05 ml. of a culture of the test bacteria (a 1:200 ratio).

In this test method, 20 p.p.m. Solution and Tincture; free iodine killed the test bacteria at 5°C., 20°C., and 37°C. in the first increment: 2 p.p.m. iodophors and iodine-phosphoric acid solutions; 50 p.p.m. chlorine in M/15 buffer (pH 8.0) and 100 p.p.m. chlorine in distilled water.

To kill all 10 increments of the test bacteria in this technique the iodine (Solution and Tincture) required 400 p.p.m.; the iodophors and iodine-phosphoric acid preparations 100 p.p.m.; chlorine in M/15 phosphate buffer (pH 8.0) 800 p.p.m. and in distilled water 920 p.p.m.

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sanitizer and 0.05 ml. of a culture of the test organism (a 1:200 ratio), 2 p.p.m. free iodine in Iodine Tincture and Iodine Solution killed *Salmonella typhosa* at 20°C. and at 37°C. in the first increment. Two increments were killed with the iodophors and iodine-phosphoric acid preparations (2 p.p.m.). To kill one increment of the test culture of *Salmonella typhosa*, available chlorine required 50 p.p.m. at 37°C. for both buffered and unbuffered, and at 20°C. required 50 p.p.m. for the buffered and 100 p.p.m. for the unbuffered. At 5°C. one increment of *Salmonella typhosa* required 2 p.p.m. free iodine to kill using the iodophors and iodine-phosphoric acid preparations, 20 p.p.m. with Iodine Tincture and Iodine Solution, 50 p.p.m. with available chlorine buffered with M/15 phosphate at pH 8.0, and 100 p.p.m. with available chlorine in distilled water. With both test bacteria 10 increments required 650 p.p.m. at 5°C. and 37°C., but 600 p.p.m. at 20°C.

Employing one increment of *Micrococcus pyogenes* var. *aureus* Iodine Tincture and Iodine Solution required 10 p.p.m. to kill at 37°C. and 20°C., but 20 p.p.m. to kill at 5°C. The iodophors and iodine-phosphoric acid preparations required but 2 p.p.m. to kill one increment at all three temperatures. Available chlorine buffered (pH 8.0) required 50 p.p.m. and unbuffered 100 p.p.m. to kill the first increment of the test bacteria culture at all three temperatures (5°C., 20°C. and 37°C.).

4) Milk had little or no effect upon the germicidal efficiencies of the iodine, iodine-phosphoric acid and iodophor sanitizing solutions as compared with dilutions prepared with distilled water. One percent milk did reduce the efficiency of chlorine (from sodium hypochlorite solution) in M/15 phosphate buffer (pH 8.0) and in distilled water. The reduction in the efficiency of chlorine was more noticeable in the first increments (two-fold) than in the latter increments. Also, one

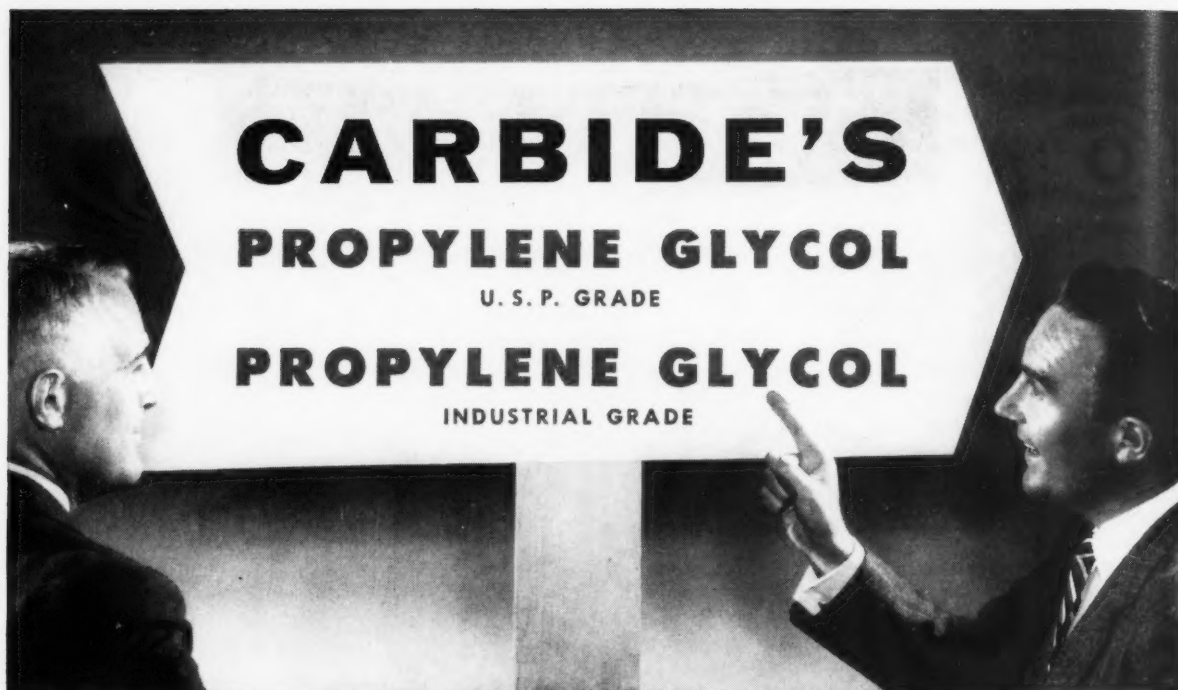
Table III. Capacity Test											
10 ml. Germicide + 0.05 ml. Inoculum											
Bacteria	Temp. C°	p.p.m.	A	B	C	D	E	F	G	H	
<i>S. typhosa</i>	20°	2	1	1	2	2	2	2	0	0	
		4	1	1	4	4	4	4	0	0	
		6	1	1	5	5	5	5	0	0	
		8	1	1	5	5	5	5	0	0	
		10	3	3	6	6	6	6	0	0	
		20	4	4	10	10	10	10	0	0	
		25	5	5	10	10	10	10	0	0	
		50	10	10	10	10	10	10	2	2	
		100	10	10	10	10	10	10	3	3	
		200	10	10	10	10	10	10	6	4	
	37°	2	1	1	2	2	2	2	0	0	
		4	1	1	4	4	4	4	0	0	
		6	1	1	5	5	5	5	0	0	
		8	1	1	5	5	5	5	0	0	
		10	3	3	6	6	6	6	0	0	
		20	4	4	10	10	10	10	0	0	
		25	5	5	10	10	10	10	0	0	
		50	10	10	10	10	10	10	3	1	
100		10	10	10	10	10	10	4	3		
200		10	10	10	10	10	10	7	6		
5°	2	0	0	1	1	1	1	0	0		
	4	0	0	1	1	1	1	0	0		
	6	0	0	1	1	1	1	0	0		
	8	0	0	1	1	1	1	0	0		
	10	0	0	2	2	2	2	0	0		
	20	1	1	3	3	3	3	0	0		
	25	1	1	4	4	4	4	0	0		
	50	2	2	5	5	5	5	1	0		
	100	3	3	10	10	10	10	3	1		
	200	7	7	10	10	10	10	4	3		
	10 ml. Germicide + 0.05 ml. Inoculum										
	Bacteria	Temp. C°	p.p.m.	A	B	C	D	E	F	G	H
<i>M. pyogenes</i> var. <i>aureus</i>	37°	2	0	0	1	1	1	1	0	0	
		4	0	0	1	1	1	1	0	0	
		6	0	0	1	1	1	1	0	0	
		8	0	0	3	3	3	3	0	0	
		10	1	1	6	6	6	6	0	0	
		20	2	2	10	10	10	10	0	0	
		25	3	3	10	10	10	10	0	0	
		50	5	5	10	10	10	10	2	0	
		100	10	10	10	10	10	10	3	2	
		200	10	10	10	10	10	10	5	4	
	20°	2	0	0	1	1	1	1	0	0	
		4	0	0	1	1	1	1	0	0	
		6	0	0	2	2	2	2	0	0	
		8	0	0	4	4	4	4	0	0	
		10	1	1	7	7	7	7	0	0	
		20	2	2	10	10	10	10	0	0	
		25	4	4	10	10	10	10	0	0	
		50	5	5	10	10	10	10	2	0	
		100	10	10	10	10	10	10	4	3	
		200	10	10	10	10	10	10	7	5	
	5°	2	0	0	1	1	1	1	0	0	
		4	0	0	1	1	1	1	0	0	
		6	0	0	1	1	1	1	0	0	
		8	0	0	1	1	1	1	0	0	
		10	0	0	1	1	1	1	0	0	
		20	1	1	1	1	1	1	0	0	
		25	1	1	2	2	2	2	0	0	
		50	2	2	5	5	5	5	1	0	
		100	3	3	10	10	10	10	3	1	
		200	5	5	10	10	10	10	4	3	

percent milk appeared to possess greater buffering activity than did the M/15 phosphate buffer solution (pH 8.0), as evidenced by the lowered efficiency of chlorine in the presence of one percent milk after the addition of the sixth increment.

5) The more effective sanitizing solutions of iodophors and

iodine-iodide-phosphoric acid preparations remained acid throughout the test and even after the addition of the tenth increment of the broth culture of test bacteria. The results of the capacity tests revealed that solutions of free iodine for use as sanitizing agents are more effective

(Turn to Page 173)



You're looking in the right direction

Propylene glycol U.S.P.—a glycol with proven high purity—has the excellent properties demanded by industry for pharmaceuticals, dyes, food flavors, and certain perfumes. Propylene glycol also assists in the dispersion of soaps, oils, waxes, and greases in water.

When used in cosmetic and brushless shaving creams, for example, propylene glycol enhances the softening and cleansing action on the skin and is a mild humectant for the cream. In brushless shaving creams, it aids in

coupling the oils and lanolin in water.

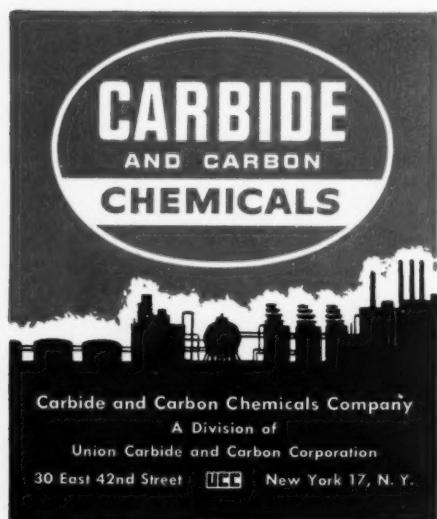
CARBIDE also produces an industrial grade of propylene glycol that is widely used as a component of polyester resins, a coupler in hydraulic brake fluids, and as a coolant in refrigeration systems.

Carbide and Carbon Chemicals Company, producer of propylene glycol since 1931, produces thirteen other diols and triols:

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- Dipropylene glycol
- CARBOSEAL Anti-leak
- KROMFAX Solvent (Thiodiglycol)
- 2-Ethyl-2-Butyl Propanediol-1,3
- 2,2-Diethyl Propanediol-1,3
- Hexylene Glycol
- 3-Methyl Pentanediol-1,5
- Hexanetriol-1,2,6
- 2-Ethylhexanediol-1,3
- Pentanediol-1,5

For further information on propylene glycol or any CARBIDE chemical, write for your copy of "Physical Properties of Synthetic Organic Chemicals" (F-6136) or the "Glycols" booklet (F-4763). Offices in principal cities—in Canada: Carbide Chemicals Company, Division of Union Carbide Canada Limited, Montreal and Toronto.

The terms "Kromfax" and "Carboseal" are registered trade-marks of Union Carbide and Carbon Corporation.



Automotive Specialties

(From Page 147)

facturers has emphasized the need for correct evaluations of such products prior to sale. Additional details are available from the Chemical Metallurgy Division, Aluminum Research Laboratories, Aluminum Company of America, New Kensington, Pennsylvania.

Cold Solders

THE automotive industry is keenly interested in developments in cold solders and bonding materials, mainly from the standpoint of a sheet metal assembly. Filled epoxy resins, for example, have several potential advantages over lead tin solders, the most important of which is their lack of toxicity. This property permits metal finishing in open areas, rather than in ventilated booths as now required for lead solders, and makes for assembly line flexibility. The biggest drawbacks of epoxy resins are their handling and mixing on an automated assembly line, their curing cycles, and their tendency to give porous castings when "puddled" as is done with solder in forming body contours. These pores are exposed in finishing operations, and we do not yet know how to paint over holes without showing paint defects.

At the dealer level the new cold solders and bonding materials have much to recommend them, not least of which may be the repair of minor body dings in local areas without complete paint removal, thus simplifying finish operations.

Summary

In summary, I have attempted to illustrate some of the uses for automotive chemical specialties and to present several suggestions for the industry's consideration. The benefits derived by all of us in the automotive industry from the excellent work accomplished by the Automotive Division of the C.S.M.A. in establishing

model legislation on brake fluid and antifreezes, cannot be over emphasized. Because of the efforts of this organization, and other changes taking place in both the automotive and chemical industries, I am sure that a most interesting year lies ahead for all of us.

Iodine Germicides

(From Page 171)

if the original solution is buffered and kept on the acid side (even if only slightly acid) throughout their use, this acid pH being maintained even in dilute concentrations.

6) The U.S.P.H.S., Robert A. Taft Sanitary Engineering Center Modification of the Black-Weber Procedure for evaluating the germicidal efficiency of sanitizing solutions revealed little change as compared to the Black-Weber Method, though the results were less consistent and less reproducible with the latter technique as compared with the former modification. In both instances, iodine was more effective than chlorine with all three test bacteria at all three temperatures.

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—★—

Witco Appoints Polzer

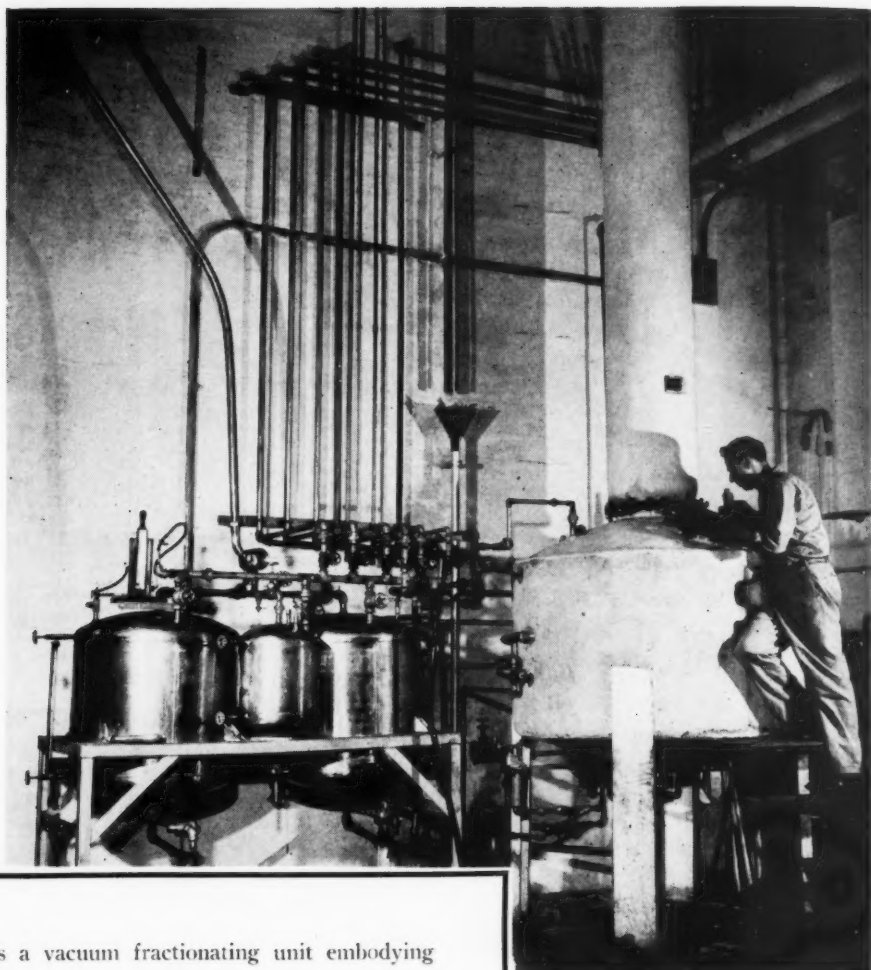
George F. Polzer has been appointed to the newly-created position of purchasing director of Witco Chemical Co., New York, it was announced recently by Max A. Minnig, president. In his new position Mr. Polzer will be responsible for all purchasing activities of Witco and its associated companies. He will work out of the firm's New York office.

A graduate of Cornell University, where he also received his Masters Degree in chemical engineering, Mr. Polzer formerly was general purchasing agent for chemical raw materials with American Cyanamid Co., New York, and assistant manager of purchases for the Texas Co., New York.

Precautionary Labeling

(From Page 165)

quently find that he can establish a reasonable basis for proceeding, without undue expense. The responsibility is his, however, and it cannot be avoided. The state legislatures are moving with practically atomic speed, and here, too, there is no place to hide — all the indications are that the disclosure of essential information as to the hazards of a product and suitable safeguards will be mandatory.



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News

Chemway Elects Russell

The appointment of William L. Russell as vice-president of Chemway Corp., New Brunswick,



William L. Russell

N. J., and president of its Zonite Division, was announced recently by Charles T. Silloway, president. Zonite is the proprietary drug and toiletry division of Chemway, which also produces household products and cosmetics.

Mr. Russell formerly was director of advertising and public relations of Warner-Chilcott Laboratories, Morris Plains, N. J.

West Earnings Lower

Net income and share earnings of West Disinfecting Co., Long Island City, N. Y., declined from \$394,400 and \$1.34 in the 31-week period ending July 7, 1955 to \$335,900 and 76 cents in the comparable period of this year. Net income and share earnings were also off in the 13-week period ending July 7. West reported a net income of \$153,700 equal to share earnings of 35 cents in that period as against \$209,000 and 72 cents in the comparable 13-weeks, a year ago.

Baltimore Science Center

Three Baltimore sanitary chemical firms, Insect Control and Research, Inc., Cornell Chemical and Equipment Co., and American

Bio-Chemical Laboratory, Inc., will share adjacent but separate facilities in the newly-constructed Science Center building in Baltimore, it was announced recently by Dr. Eugene J. Gerberg, president of the center. The facilities include library and reference rooms, administrative offices, conference rooms, varied laboratory and testing areas, and warehouse and service accommodations.

The three firms will engage in testing and research covering a wide range of scientific activities including household pest, termite, weed, and ant control problems in industrial sanitation, and the development of agricultural chemicals and pesticides.

Insecticide Duster

A new squeeze-duster package for dispensing the insecticide chlordane, designed for the control of insects both indoors and out, has been introduced by E. I. du Pont de Nemours, Inc., Wilmington, Del., it was announced recently.

The product, a six percent formulation, is said to be effective in controlling ants, roaches, spiders, beetles and cutworms. It comes in a flexible package which is designed for one-hand operation.

One squeeze of the flexible package sends a puff of insecticide into cracks and crevices which are hard to reach with any other type of application. The directional nozzle also makes it easy to dust baseboards, window and door frames, and insect runways.

New MacCarl Sprayer

An improved model of its "Fog Maker," designed for spraying deodorants, insecticides, germicides and floor waxes, has been developed by MacCarl Co., Cleveland, it was announced recently. The sprayer, which can be operated with one hand, has a non-corrosive container and two spray

heads. The container is available in two sizes—pints and quarts.

Lomax Joins Velsicol

Velsicol Chemical Corp., Chicago, recently announced the addition of Jack Lomax to its west-



Jack Lomax

ern division staff. In his new post, Mr. Lomax is responsible for handling technical problems and contacts with colleges and experiment stations. His duties include working with sales and technical personnel of Velsicol customers handling chlordane, heptachlor, and endrin insecticides. He operates from the firm's Berkeley, Calif., office.

Prior to joining Velsicol, Mr. Lomax represented Geigy Chemical Corp., Ardsley, N. Y., in southern California and Arizona. He holds a B.S. degree in entomology from the University of Nebraska where he later served on the faculty as extension specialist in entomology.

Atlas V. P. Retires

Atlas Powder Co., Wilmington, Del., recently announced the retirement of Kenneth R. Brown, vice-president and director, after 38 years' service. Mr. Brown won honor awards of both the American Chemical Society's Division of Carbohydrate Chemistry and the Commercial Chemical Development Association in 1955 for his work in the commercial development of sorbitol.

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J. H. Hinz Company
Cleveland 13, Ohio
Harry Holland & Son, Inc.
Chicago 6, Ill.
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Danbury, Conn.

J. M. Washburn Co.
Arlington 74, Mass.
H. C. Ross
Burbank, Cal.
E. M. Walls Company
San Francisco, Cal.
Harry Holland & Son, Inc.
Detroit 38, Michigan

NACA Meets, Elects F. W. Hatch of Shell

FRED W. HATCH, manager of the agricultural chemical division of Shell Chemical Co., New

Mr. Allen, who served two terms as NACA president, speaking on the "Threshold of the Fu-



Fred W. Hatch

York, was elected president of the National Agricultural Chemicals Association at the 23rd annual meeting at Spring Lake, N. J., Sept. 5-7. He succeeds W. W. Allen, manager of agricultural chemical sales for Dow Chemical Co., Midland, Mich.

Speaking on "Pesticides Place in the Expanded Highway Program," Blanchard J. Smith, vice-president of Chipman Chemical Co., Bound Brook, N. J., declared that pesticide chemicals which eliminate weeds and control destructive insects are proving to be a boon to highway landscape engineers.

Dr. E. F. Knipling of U. S. Department of Agriculture's agricultural research service reported that insecticides generally provide the most successful means of insect control. "Other important crops and livestock would suffer severe damage, particularly in insect outbreak years, without the use of insecticides," he said. He added, "that the total research investment of the federal and state agencies and that of industry, all of which have cooperated, has yielded high returns to the grower and to the nation's economy which fully justifies the effort."



J. V. Vernon

ture," predicted a "tremendous growth for the farm chemical and pesticides industry and in public understanding of its products."

J. V. Vernon, president of Niagara Chemicals Division of Food Machinery and Chemical Corp., Middleport, N. Y., elected vice-president to succeed Mr. Hatch, called for greater efforts on the part of manufacturers of pest control chemicals to aid the farmer in his battle against crop-destroying pests. Mr. Vernon had been a member of the NACA board of directors since 1954.

Lea S. Hitchner was re-named executive secretary and treasurer, and three new board members were also chosen. The new NACA directors are:

Arthur W. Mohr, president of California Spray-Chemical Corp., Richmond, Calif.; George R. Vila, assistant general manager of Naugatuck Chemical Division of United States Rubber Co., Naugatuck, Conn.; and T. L. Wilkerson, general sales manager of the agricultural chemicals division of American Cyanamid Co., New York.

Day-Baldwin Relocates

Day-Baldwin, Inc., Newark, N. J., has moved to its new plant

at 26 Cordier St., Irvington, N. J., it was announced recently by H. L. Friedman, vice-president. The company, manufacturer of private label specialties had occupied the Newark site for 25 years.

Moth Committee Meets

At a meeting of the Moth Control Committee of the Chemical Specialties Manufacturers Association, held September 11 at the Commodore Hotel, New York, plans for a \$50,000 publicity campaign were discussed further. The subject was referred to a small "task committee" to develop a workable plan for a campaign and to check with various agencies on proposals for a campaign. This small committee comprised of public relations men will report back to the general committee at a later date.

Don J. Templeton of Stanley Home Products, chairman of the general Moth Control Committee, presided at the meeting. Others who attended included Fred A. Koch of Dow Chemical, vice-chairman; Jack Hutchinson of Monsanto Chemical; M. S. Galler of Reefer-Galler; F. W. Wolff of Dupont; Harry Todd, Neal Draper and R. L. Reynolds of Solvay; L. H. Wright, Robert B. Weidlein, and William M. Domin of Koppers; Abe Weiner of Standard Chlorine; J. C. Esher of Barrett; Paul Filter of Dow; Morris Boardman of Mabex Corp.; Frank Zumbro of Dupont. The "task committee" is composed of Messrs. Filter, Domin, Todd, Galler, Weiner and Zumbro.

More Michigan Chem. Stock

Michigan Chemical Corp., St. Louis, Mich., recently announced the proposed sale of 150,000 shares of the firm's treasury common stock to Pennroad Corp., Webster's Investor's, Inc., and American Manufacturing Co. Consummation of this agreement depends upon Michigan Chemical's capital requirements for future expansion. At present there are 537,077 shares of common stock outstanding.

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Dr. Cohen Joins Mathieson

Dr. Sylvan I. Cohen has joined Olin Mathieson Chemical Corp., Baltimore, as an agricultural



Dr. Sylvan I. Cohen

research specialist in the research and development department of the insecticides division at Port Jefferson, N. Y., it was announced recently. He was formerly vice-president for research of Gallowhur Chemical Corp., Ossining, N. Y.

New Tall Oil Process

A new process for the manufacture of tall oil rosin and fatty acid has been introduced by Crosby Chemicals, Inc., Picayune, Miss., it was announced recently.

The rosin manufactured by this process has a high softening point and acid number. In addition, the sulfur has been removed eliminating the odor usually associated with tall oil rosin. The new process is also utilized in the manufacture of "Ceofatol Super X," an unbleached fatty acid with a maximum color of three on the Gardner scale. Its rosin acids and unsaponifiables are low with a correspondingly high acid number.

Moore Joins Grace

Richard L. Moore, formerly assistant treasurer and director of personnel and public relations of Foster D. Snell, Inc., New York, has joined the public relations division of W. R. Grace & Co., New York. In his new post, Mr. Moore will be responsible for two of

Grace's seven chemical divisions—Grace Chemical Co. and the polymer chemicals division. He is a graduate of Bucknell University.

Diehl & Co. Relocates

Wm. Diehl & Co., New York, importer of refined waxes and shellac, recently announced a relocation of its New York office at 120 East 56th St., New York 22, N. Y. The firm for the past 24 years had been located at 330 West 42nd St., New York 36, N. Y.

Hercules in Mexico

Hercules Powder Co., Wilmington, Del., recently announced its entry into the wood naval stores industry in Mexico through the acquisition of stock in Corbu Industrial, S. A., Mexico City. The move represents the company's first manufacturing venture in Latin America.

In an effort to increase Corbu's production capacity, Hercules will build a new plant near Ciudad Hidalgo, Michoacan, which will produce rosin turpentine, pine oil and other terpene chemicals. Pine tar, a Corbu product since the company was formed in 1951, will continue to be made. The new unit is expected to be in complete operation by late 1957. Richard B. Cordeiro, who founded Corbu, will continue as general manager of the firm.

Floor Care Folder

Oil Specialties & Refining Co., 18 Bridge St., Brooklyn 1, N.Y., has recently announced publication of a new four-page folder on "Safite Maintainer," a semi-dry maintainer for use on linoleum, asphalt, rubber or vinyl floors, in conjunction with "Safite" floor finish. Covered in the folder are instructions on preparing the floor for the two-product treatment, applying the finish, applying the maintainer, methods of testing the product's effectiveness, and other uses. The folder is available upon request.

Velsicol Names Wirwille

James Wirwille has been named southeastern agricultural chemicals sales representative for



James Wirwille

Velsicol Chemical Co., Chicago, it was announced recently. Mr. Wirwille formerly had served in a similar capacity in the midwest.

Mr. Wirwille's new territory includes North and South Carolina, Virginia, and the counties of Burke and Richmond in Georgia. He will headquarter in Columbia, S. C.

Atlas Reassigns Two

Atlas Powder Co., Wilmington, Del., recently announced the reassignment of two salesmen attached to its chemicals division. Robert L. Herrman, formerly with the firm's product development department, Wilmington, has been transferred to the Atlanta, Ga., sales office while John J. DeGroot, formerly with the New York regional sales office has been transferred to Chicago.

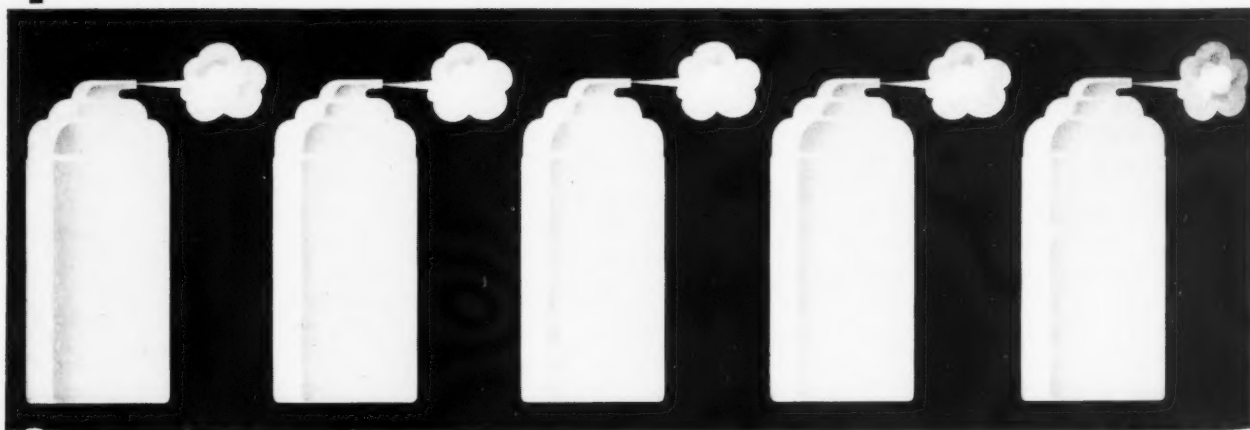
Moves Toronto Office

Natural Products Corp., Montreal, will have a new location at 60 Clarkson Ave. for its Toronto offices, it was announced recently by George E. Fleming, president. The new building, which will be completed Sept. 1, will be the site of the Ontario sales office plus a new warehouse. The Toronto affiliate will continue under the management of J. Harry Trotter, a director of the firm.



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CSMA Industrial Floor Wax Survey

SHIPMENTS of commercial and industrial self-polishing wax emulsions (less than 16 percent non-volatile) have dropped about three percent between 1954 and 1955 according to the second annual survey of industrial waxes and floor finishes, published late last month by the Chemical Specialties Manufacturers Association. The 1955 total amounted to 8,103,569 gallons compared with 8,345,220 gallons in 1954. Liquid floor cleaners and wax strippers showed an increase of approximately 12½ percent, accounting for 3,992,393 gallons.

The survey covers 1955 shipments, at manufacturers' level, of items produced for industrial and institutional use, including sales to government agencies. Retail type packages for household use are not included in these statistics.

The survey incorporates reports by 61 firms of an estimated 150 companies making such items. CSMA believes that about 70 percent of United States production is covered in the survey, the results of which were tabulated by

Ernst & Ernst, New York accountants, on behalf of the association.

Of all products surveyed, resin finishes show the most pronounced upward trend. The aqueous type showed an increase of 14 percent from 681,841 gallons in 1954 to 776,587 gallons in 1955; shipments of the alcohol based type jumped 180 percent to 257,280 gallons from 91,609 gallons in 1954. Floor sealers and gym finishes of the lacquer type recorded large gains, having increased 150 percent to 78,439 gallons in 1955 from 31,238 gallons in 1954. Shipments of other non-aqueous types of sealers rose 12 percent to 1,614,652 gallons from 1,524,197 gallons reported in 1954. These figures represent a reversal of previous trends. Production of alcohol-base resin finishes had dropped nine percent between 1953 and 1954 and floor sealers and gym finishes 7.5 percent.

A 27 percent increase in shipments of self polishing wax emulsions of 16 percent and greater non-volatile content, the figure amounting to 1,427,622 gallons. Paste wax emulsions increased 13

percent and dust mop treatment 7½ percent.

Solvent type waxes in liquid form gained eight percent, but pastes of this type dropped to 2,464,385 pounds from 2,476,185 reported in 1954.

The only sharp drop among floor products listed in this survey is reported for sweeping compounds. With shipments amounting to 45,526,482 pounds in 1955 these products have declined by 38 percent from the 1954 figure of 73,411,515 pounds. A seven percent gain had been reported for sweeping compounds between 1953 and 1954.

The overall floor products picture in the industrial and institutional field shows a definite upward trend, with resin finishes and sealers accounting for the most substantial gains.

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New Rose Office

Rose Exterminator Co., Cincinnati, recently announced the opening of a modern new Michigan district office and warehouse at 8401 West Chicago Blvd., Detroit. The new location permits Rose to expand into retail sales, which was not possible at the previous address.

Second Annual C. S. M. A. Survey of Industrial Waxes and Floor Finishes

(Shipments in 1954 and 1955 at manufacturers' level, of floor products designed for use in maintaining floors in commercial, industrial, institutional, public, and similar buildings. Includes all sales to government agencies—federal, state, and local—but does not include sales of retail packages, i.e., shelf goods.)

		1954			TOTALS	1955			TOTALS
		Manufacturers Own Brands		Products Made For Others To Label		Manufacturers' Own Brands	Manufactured For Others		
		Manu- factured	Purchased						
Wax Emulsions—(Self polishing)									
Less than 16% non-volatile	gals.	5,154,322	79,817	3,111,081	8,345,220	5,643,537	2,460,032		8,103,569
16% and greater non-volatile	gals.	856,494	34,699	229,037	1,120,230	1,173,116	254,506		1,427,622
Resin Finishes—(Exclusive of shellac varnishes)			—						
Aqueous	gals.	450,636	—	231,205	681,841	515,600	260,987		776,587
Alcohol	gals.	80,544	—	11,065	91,609	202,489	54,791		257,280
Liquid Floor Cleaners and Wax Strippers									
Less than 20% non-volatile	gals.	3,168,691	23,571	392,624	3,584,886	2,858,319	1,134,074		3,992,393
20% and greater non-volatile	gals.	1,622,261	4,200	283,988	1,910,449	1,397,130	422,677		1,819,807
Floor Sealers and Gym Finishes									
Non-aqueous, oleoresinous, petroleum solvent	gals.	1,045,407	238,472	240,318	1,524,197	609,122	1,005,530		1,614,652
Lacquer and others	gals.	22,170	9,068	—	31,238	78,439	—		78,439
Solvent Type Waxes									
Liquid Waxes	gals.	307,381	1,324	130,805	439,510	238,052	232,663		470,715
Paste Waxes	lbs.	1,270,517	2,758	1,202,910	2,476,185	1,266,097	1,198,288		2,464,385
Paste Wax Emulsions	lbs.	119,033	—	244,770	363,803	129,480	282,763		412,243
Dust Mop Treatment—(Exclusive of floor)	gals.	450,461	700	98,383	549,544	474,194	117,786		591,980
Sweeping Compounds	lbs.	39,899,254	1,458,261	32,054,000	73,411,515	35,638,918	9,887,564		45,526,482

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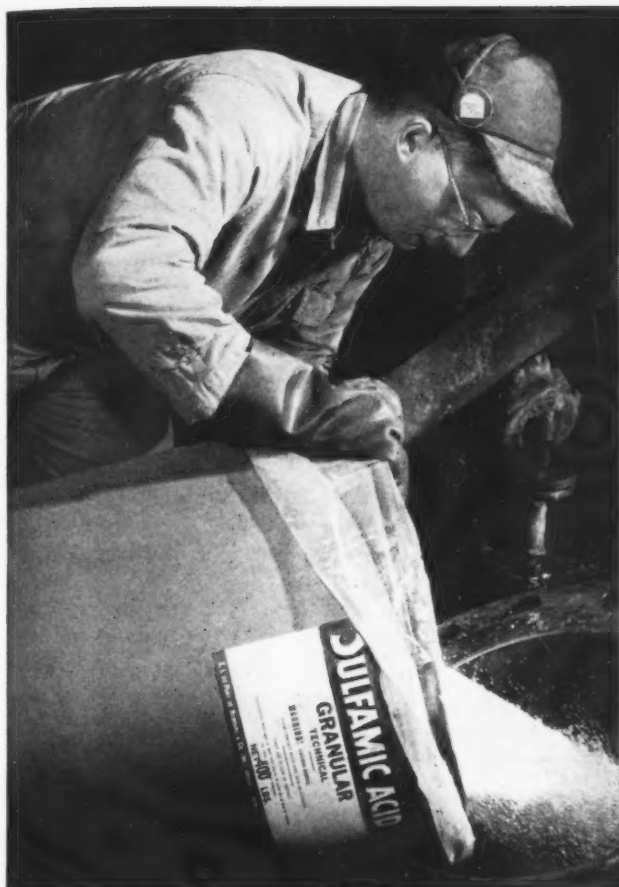
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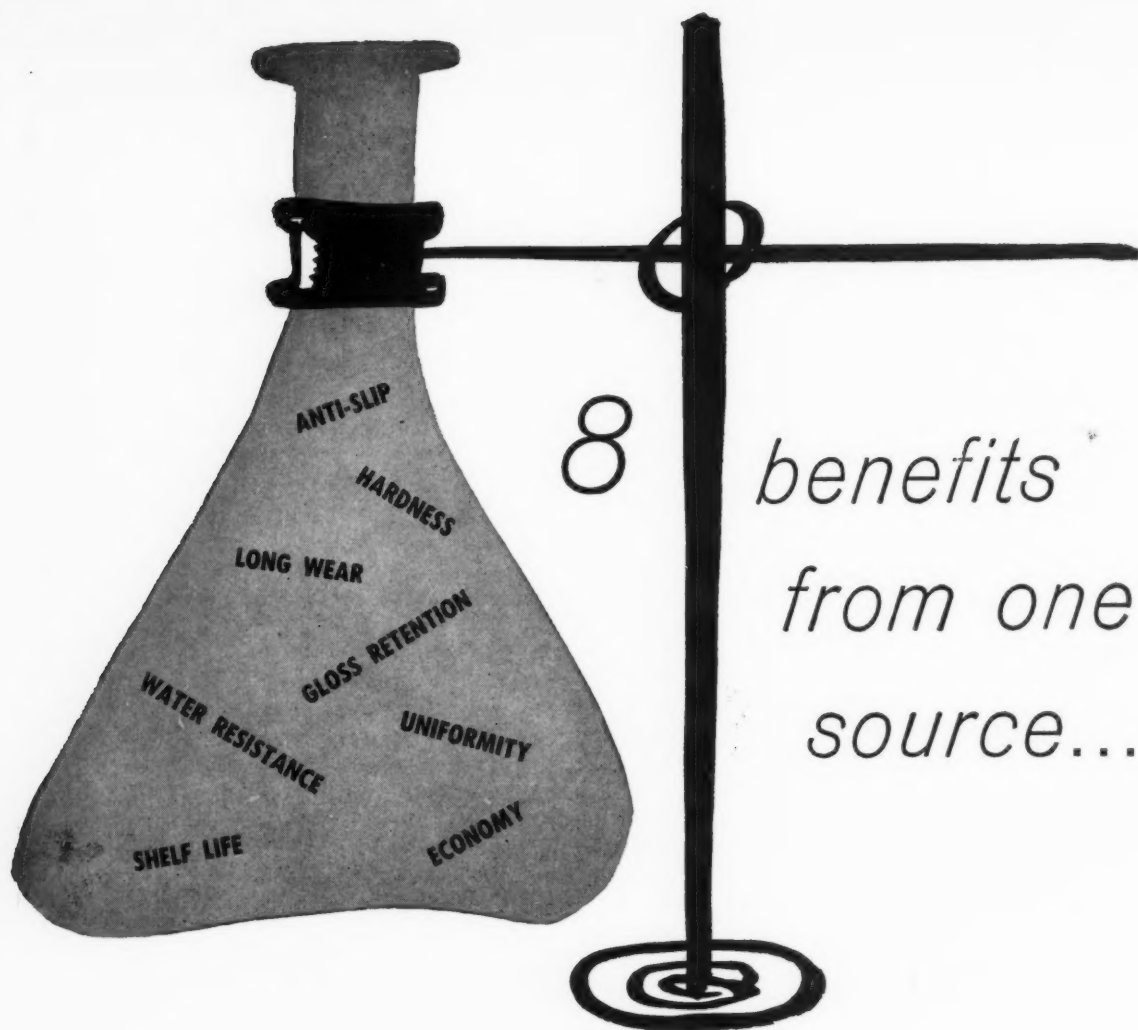
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LOW MELT. Durez resins of the high-melt types are furnished in modified form with a melting point suitable for processing in steam-jacketed kettles. If you use this type of equipment, ask about Durez 13560 and 14140, which melt at about 60°C.

LEVELING. Excellent "lay-down" is obtained by using Durez 15546 alkali-soluble resin in no-rub emulsion polishes. Recommended concentrations of this high-melt resin in emulsions based on vegetable, mineral or synthetic waxes also improve water-resistance and hardness.

New Lentheric Site

Lentheric, New York, a division of Olin Mathieson Chemical Corp., Baltimore, has opened a new plant in West Caldwell, N. J., it was announced recently by Jack Mohr, general manager. The new unit will produce items in the Lentheric line and house the firm's executive offices. Showrooms and publicity department will continue to be maintained at the New York office, 745 Fifth Ave., New York 22, N. Y.

Conn. Labelling Bill

A bill covering the labelling of hazardous products during sale and use, has been prepared by the Manufacturers Association of Connecticut, Inc., to be introduced early in the 1957 session of the Connecticut legislature, it was announced recently by Frederick H. Waterhouse, counsel for the MAC.

The bill if passed would prohibit the sale or distribution of any hazardous substance in package or container, designed for general household use, unless the substance is properly labelled.

Proper labelling is defined in Section 3 of the bill as the name and place of business of the person manufacturing the substance; the chemical, common or generic name, and not the trade name only, of each component that is a hazard as used or found in the substance; a signal word such as danger, caution, warning, to be described by the commissioner depending upon the degree of hazard; an affirmative statement as to the principal hazard, such as flammable, causes burns, etc.; the word poison, if necessary; and instructions for handling and storage.

The bill also requires that these warning statements be prominently displayed on the package or container and be printed in English and in legible type which shall be in contrast by typography, layout or color with other printed matter on the package or container.

If passed the act would become effective July 1, 1958. A bill, similar in nature, failed to pass the last session of the legislature.

Tremm Occupies New Plant

Tremm Chemical Corp., Miami, Fla., has occupied a newly-constructed sodium hypochlorite plant at 1865 N. E. 144th St., North Miami, Fla., it was announced recently by George W. Kates, chairman of the board. Tremm's line of bleaches are packaged both under its own brand and those of private labels.

Equipment in the plant includes steel and concrete tanks for the batching and storage of five, 10 and 16 percent solutions as well as an automatic bottling line equipped to handle quart, half-gallon and gallon bottles. Rail facilities on the company's own spur track provide for handling of incoming raw materials and outgoing shipments. Six cars may be accommodated at one time.

Tremm also distributes heavy chemicals such as muriatic acid, flake caustic and pool conditioning agents. Its products are distributed by jobbers and distributors throughout southern Florida. Plans call for a sales organization eventually to cover the entire southeastern part of the United States and many Latin American countries.

Newly built plant of the Tremm Chemical Corp. located in North Miami, Florida.

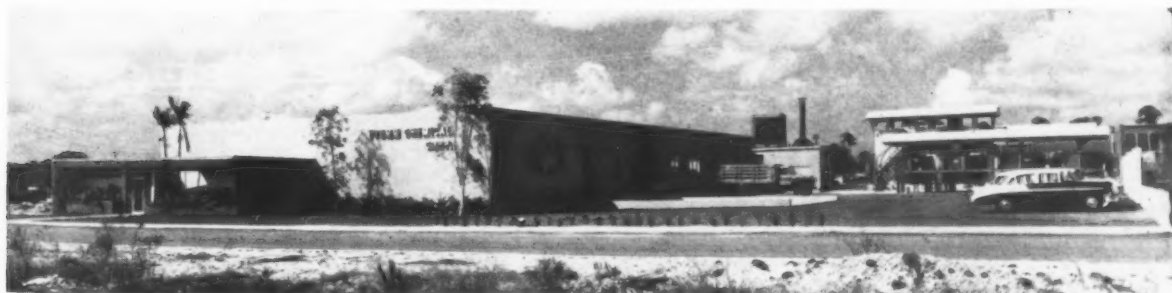
Clorox Income Off

Clorox Chemical Co., Oakland, Calif., recently reported a slight drop in net income and share earnings to \$2,032,862 and \$2.81 in the fiscal year ended June 30, from \$2,041,252 and \$2.82 in the preceding fiscal year.

At the annual meeting of stockholders held Sept. 25, a proposal to increase the authorized stock to 1,050,000 shares from 750,000 shares was voted upon. The company has 723,444 shares outstanding at the present time. As some increase in outstanding shares is expected from the exercise of stock options to employees, the company said it felt it should have a little more leeway. It added that there were no other plans at present for use of the additional stock.

New Aerosol Larvacide

Larvacide Products, Inc., New York, recently announced the development of "Aerosol Larvacide," a new fumigant, and a new plastic piping system, for use in fumigation. The piping system, which enables owners of mills and grain elevators to sanitize their establishments completely, without exposing employees to hazardous or irritating toxicants, can be installed rapidly and with minimum effort. No special tools are required, since all tubing connections are hand made. The system is claimed to be safe, flexible and adaptable, and in case of building changes may easily be moved to a new location. A folder giving further data on the products is available from the firm at either its New York office, 117 Liberty St., or its California branch, 1515 3rd St., San Francisco.



New Glass-Cleaning Process

A new process for cleaning and sanitizing tavern and restaurant glassware has been introduced by George Stearns Chemical Corp., Madison, Wisc., it was announced recently.

The process called "Three Strike Method," consists of washing the glassware in three separate tanks that respectively contain a powder with a water softener and surface-active ingredients that penetrate rapidly to emulsify grease, a sudsless detergent that conditions the water and removes lime, and

New "Three Strike Method" for sanitizing tavern and restaurant glassware announced recently by George Stearns Chemical Corp., Madison, Wis. Three products: surfactant with water softener, sudsless detergent and odorless disinfectant comprise the three steps.



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an odorless disinfectant and free rinsing agent.

The new process is claimed to be effective in removing lipstick marks and milk film in one washing, in addition to thoroughly cleansing and sanitizing the glass.

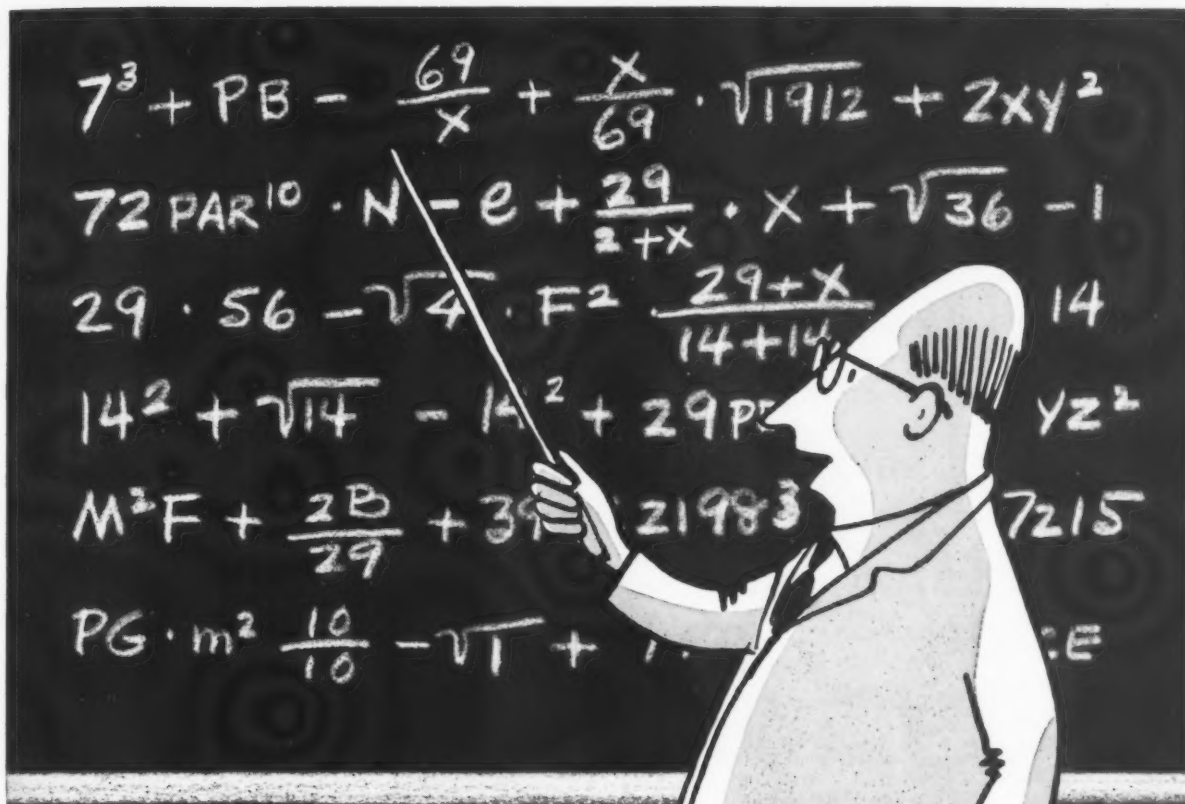
Hooker Price Rise

Hooker Electrochemical Co., Niagara Falls, N. Y., recently announced price increases of one-quarter cent per pound on sodium sulfide and sodium sulfhydrate and a one-half cent per pound increase on sodium tetrasulfide.

Carload or truckload lots of flake sodium sulfhydrate in 350-pound drums will be priced at six and three-quarter cents per pound. Liquid sodium sulfhydrate in tanks will be listed at six cents per pound. Carload or truckload lots of flake sodium sulfide in 350-pound drums will sell for five and one-half cents per pound while the same quantities of 40 percent sodium tetrasulfide will be four cents per pound in fifty-five gallon drums.

Pennsalt Expands Plant

Pennsylvania Salt Manufacturing Co., Philadelphia, recently announced the addition of a new wing to its blending and packaging plant in Chicago Heights, Ill. The wing, which will almost double the plant's size, will be used for offices, a small control laboratory and additional warehouse space.



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CSMA Committee Manuals

The Chemical Specialties Manufacturers Association, New York, has released drafts of its General Committee Manual and its Committee Composition and Functions manual, it was announced recently. The proposed manuals have been sent to all members and will be presented for correction and adoption at the meetings of the board of governors, Sept. 24 and 25 at Oyster Harbors Club, Osterville, Mass.

The General Committee Manual consists of seven sections including organization, scope of activities, meetings, minutes, special matters, reports and special limitations. The Manual of Committee Composition and Function lists all CSMA committees including the executive, coordinating, publicity and public relations, legislative, precautionary labeling, finance, toxicity, policy advisory, arrangements, program, entertainment, and membership. It also lists their composition and function.

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Hercules Personnel Shifts

Hercules Powder Co., Wilmington Del., announced last month a series of changes among its plant production men at its naval stores, chemical and cellulose products departments. Lyle W. Rothenberger, superintendent of the oxychemicals plant at Gibbstown, N. J., has been appointed manager of that plant. John M. Eagan, assistant superintendent at Gibbstown, has been named manager at the Savannah, Ga., plant, while Lewis M. Kieffer, assistant superintendent at the naval stores plant at Hattiesburg, Miss., has been assigned to succeed Mr. Rothenberger at Gibbstown. Paul E. Graybeal, operating supervisor of the chlorinated products area, cellulose products, Parlin, N. J., has been transferred to Hattiesburg, replacing Mr. Kieffer. Donald F. Stauffer, shift supervisor at Higgins, has been transferred to oxychemicals sales and development work at the Wilmington home of-

fice. David R. Bosworth, a chemical engineer at Hattiesburg has also been transferred to Gibbstown.

—★—

New Vaporizer Plant

Associated Products, Inc., Bakerstown, Pa., manufacturers of insecticide vaporizers, recently announced occupancy of its new factory and office building located at 1479 Glenn Ave., Glenshaw, Pa.

ADM Moves in N.Y.C.

Archer-Daniels-Midland Co., Minneapolis, recently announced the transfer of its New York regional sales office of the chemical products division, to the 16th floor of the Transportation building, 225 Broadway, New York 7, N. Y. The old address was in the Woolworth building. This office handles sales and service of fatty alcohols, fatty acids, glycerides, and sperm oils.

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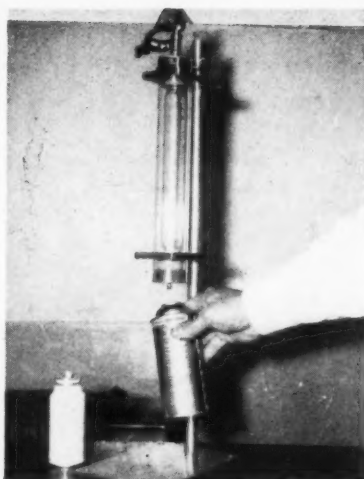
Refinery: Mamaroneck Chemical Div., Mamaroneck, N. Y.



New Lab Aerosol Filler

Builder's Sheet Metal Works, Inc., 108 Wooster St., New York, has announced a new laboratory aerosol pressure filler for metering propellants into aerosol containers. Consisting of an aluminum stand and base and a pyrex glass burette enclosed in a heavy lucite tube for safety, the machine is used by slipping the capped aerosol bottle or can onto the valve of the burette. This valve located at the bottom of the burette is a standard type aerosol valve with an adaptor which permits pressure loading of the containers. When filling is completed, with the removal of the loaded container, the propellant automatically shuts off. Mr. Scheck stated that the use of such a valve on the burette meant simple and inexpensive replacement should it be required. The unit is available with either 30 ML. or 100 ML. burettes.

Builder's manufactures a full line of aerosol laboratory equipment including a snap-on screw top



for aerosol containers, pressure testers, propellant tank racks, constant temperature water bath, dry ice maker and other related equipment.

Janie Appoints Traum

David Traum, Inc., New York, has been appointed exclusive distributor of the Janie Spot Cleaner line to notions department throughout the United States.

Robert York Bradshaw

Robert York Bradshaw, 83, president of Bradshaw-Praeger & Co., Chicago, died Sept. 7, in Chicago. Mr. Bradshaw was active in the shellac industry for more than 55 years.

Starting as a clerk with Cudahy Packing Co., Chicago, in 1892, Mr. Bradshaw held various sales and management positions in the shellac and glycerine industries. In 1922 he co-founded Bradshaw-Praeger and served as president until his death.

Monsanto Sales Divisions

Monsanto Chemical Co., St. Louis, recently announced that it has separated agricultural chemical sales from industrial chemical sales in its inorganic chemicals division. M. F. Walsh has been named product manager for the newly-created agricultural sales section while J. B. Trotter has been appointed to serve in the same capacity for the industrial sales section.

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Detergents AOCs Topic

(From Page 39)

dealing with "Foam Stability Evaluation of Hand-Dishwashing Detergents, in which the authors, L. E. Leenerts and H. J. Myers of Purex Corp., Ltd., South Gate, Calif., explained how they departed from previous methods by incorporating use of a variety of soil ingredients, such as oils, fats, eggs, milk, vegetable juices, starches, etc. that may be present in actual home and institutional dishwashing practices. Their test method, they said, measures the properties of initial foam buildup and stability. It has shown good reproducibility and correlates well with consumer acceptance testing.

Technical reports on investigations of synthetic detergents from animal fats, conducted at the Eastern Regional Research Laboratory, Philadelphia, were presented in two separate papers. A. N. Wrisley, F. D. Smith and A. J. Stirton in their paper, dealt with "The Ethenoxylation of Fatty Acids and Alcohols," and J. K. Weil, R. G. Bistline, Jr., and A. J. Stirton, in another paper, told of their laboratory work with various salts of alpha-sulfonated fatty acids.

Herman J. Weiser, Jr., of Procter & Gamble Co., Cincinnati, described a new method for determination of pyrophosphates in commercial triphosphate based on the ion exchange procedure, with modifications which he explained. The method, he said, can be applied to triphosphate built detergents after separating the organic matter by an alcohol separation and it can be run in about four hours.

A method of soap washing which has proved suitable for handling many types of saponified soaps was explained in a paper authored by W. J. Podbielniak, G. J. Siegenhorn and H. J. Kaiser of Podbielniak, Inc., Chicago. They described equipment, installation and operating procedures of a commercial plant employing pressure-tight, multi-stage counter current

centrifugal contractors for continuous automatic washing and finishing of soap produced by kettle saponification. This method, it was asserted, is particularly advantageous for companies desiring to increase production in limited space without adding more kettle or related equipment.

A new feature of the A.O.C.S. program this year was a "safety symposium," dealing with safety problems and accident prevention measures in oil extraction processes. Various phases of this subject

were discussed by six speakers. Exhibits of equipment of interest to oil processors were presented by 27 manufacturers.

For the ladies among the 800 persons registered at the meeting the Chicago committee arranged a program of sight seeing tours, luncheons and a visit to NBC's color television studio. General entertainment included a cocktail party in the Hotel Sherman's Bal Tabarin on Monday night, and a dinner-dance in the grand ballroom Tuesday evening.



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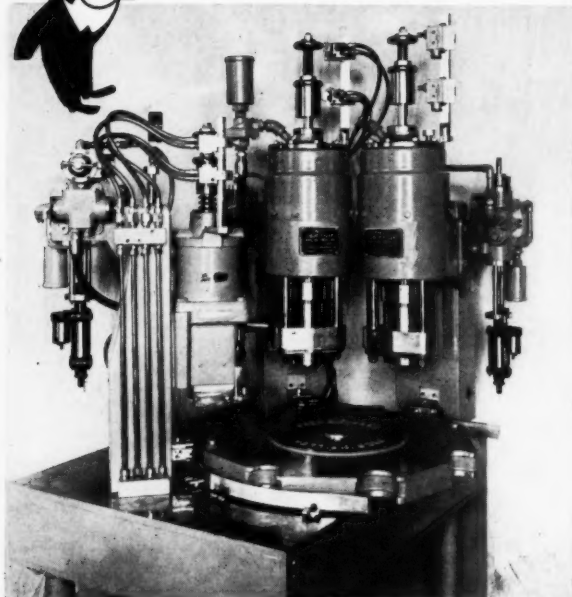
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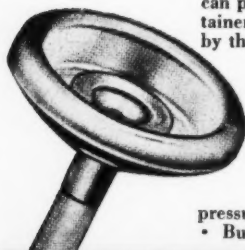
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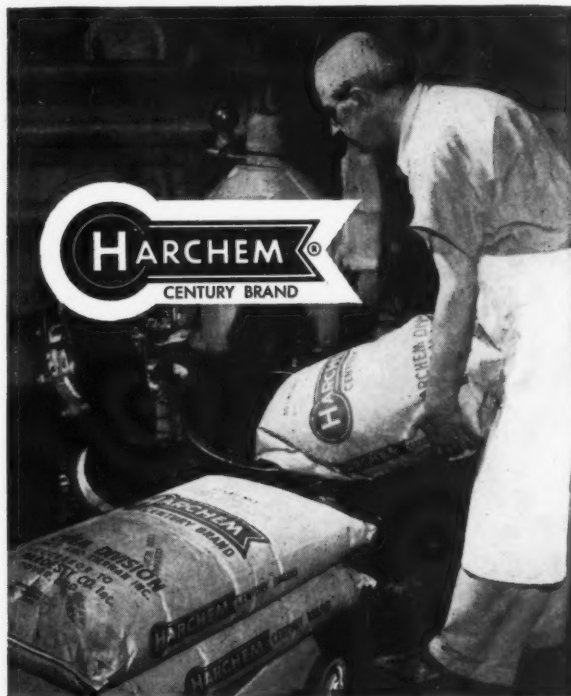
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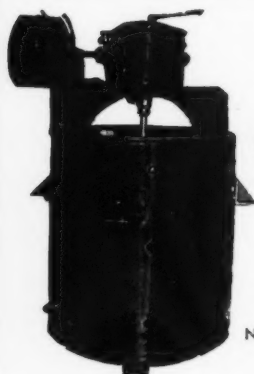
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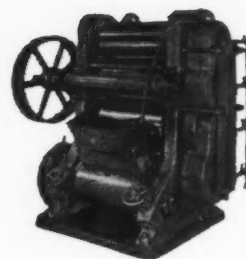


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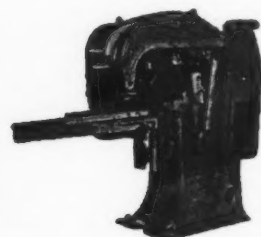


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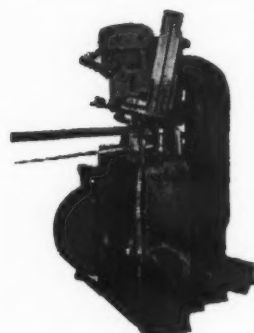
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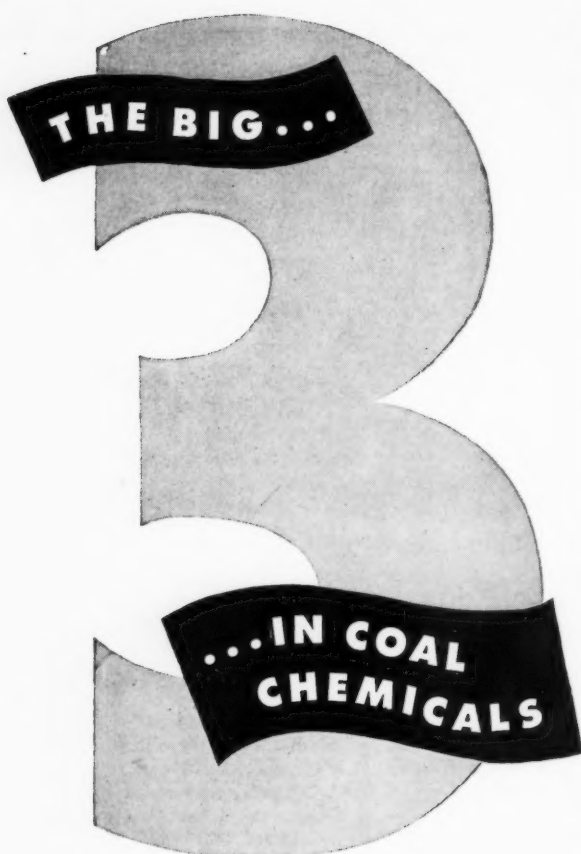
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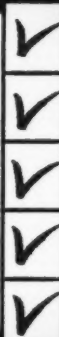
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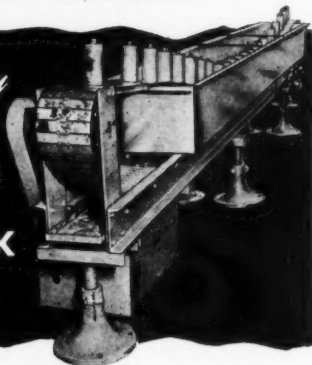
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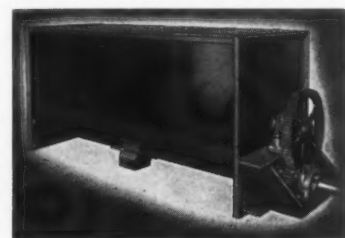
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Aerosol Publicity Meeting

A meeting of the Aerosol Publicity Committee was held September 12 at the Chemists Club, New York, preliminary to presenting a basic public relations plan to the Board of Governors of the Chemical Specialties Manufacturers Association. Several publicity plans were outlined and discussed. Fred G. Lodes of Precision Valve Corp. presided. Others who attended the meeting included Al S. Pero of Fluid Chemical Co.; Charles E. Beach of John C. Stafford & Sons; E. E. Kayser of Krylon, Inc.; Joseph J. Tomlinson of General Chemical Division, Allied Chemical & Dye Corp.; M. J. Heffernan and Frank R. Zumbro of E. I. du Pont de Nemours & Co.; H. W. Hamilton, secretary of CSMA.

—★—

Feinson Plans Trip

Burton L. Feinson, general manager of American Dispenser Co., New York, recently announced plans for a South American business trip during the latter part of

January 1957. Mr. Feinson will visit Venezuela and Colombia in an effort to determine the advisability of establishing American sales offices there.

Coconut Oil Substitutes

(From Page 45)

Brown sarson, sesame, peanut and castor oils as substitutes for coconut oil have been reported. It has been shown that of the total quantity of oils required for manufacture of toilet soaps 50 percent must be coconut oil for good lathering and other detergent qualities and the balance can be made up by sesame peanut and castor oils. The quality of these soaps was up to standard. They were found to contain only very small quantities of free alkali and free fat, the total fatty acids have been found to be within limits of toleration. It has also been shown that there has not been an appreciable change in free fat and free alkali and total fatty acids on

storage in these samples except in moisture content which has decreased considerably, obviously due to drying. It has been further shown that samples of toilet soaps manufactured by cold process in markets have been found to be very inferior in quality as they have been found to contain a very high percentage of moisture or a very low percentage of fatty acids. The samples of milled soaps, however, have been found to be of good quality and compared very well with imported products. Samples of washing soaps also have been found to be adulterated in one form or another by the addition of soap stone, sodium silicate and other cheap fillers.

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5. Turner S. H. (1949) Report on the edible vegetable oil resources of West Pakistan p. 18.

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Coming Meetings

American Public Health Association, 84th annual meeting, Convention Hall, Atlantic City, Nov. 12-16.

American Society for Testing Materials, Committee D-21 on Wax Polishes and Related Materials, Washington, D. C., Dec. 10.

Association of American Pesticide Control Officials, 10th annual convention, Shoreham Hotel, Washington, D. C., Oct. 19-20.

Association of American Soap & Glycerine Producers, 30th annual meeting, Waldorf-Astoria Hotel, New York, Jan. 23-25.

Association of Consulting Chemists and Chemical Engineers, annual meeting and symposium, Belmont Plaza Hotel, New York, Oct. 23.

Chemical Specialties Manufacturers Association, 43rd annual meeting, Mayflower Hotel, Washington, D. C., Dec. 3-5.

Commercial Chemical Development Association, Netherland Hilton Hotel, Cincinnati, Nov. 1.

Entomological Society of America, annual meeting, Dec. 27-31, 1956, Hotel New Yorker, New York City.

International Sanitation Maintenance Show and Conference, New York Coliseum, Oct. 14-16.

National Association of Retail Grocers, Los Angeles, June 10-14, 1957.

National Motel Show, 3rd annual convention, at Morrison Hotel, Chicago, Oct. 21-27.

National Hotel Exposition, 41st annual show, Coliseum, New York City, Nov. 12-16.

National Packaging Exposition and Conference, International Amphitheatre, Chicago, April 8-11, 1957.

National Pest Control Assn., 23rd annual meeting, Sheraton-Cadillac Hotel, Detroit, Oct. 22-25.

National Sanitary Supply Association, first western regional trade show and convention, Ambassador Hotel, Los Angeles, Nov. 25-27; national trade show and convention, Conrad Hilton Hotel, Chicago, March 31, Apr. 1-3 1957.

Eighth Plant Maintenance Show & Conference, Public Auditorium, Cleveland, Jan. 28-31, 1957.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, Nov. 7; annual meeting and dinner, Biltmore Hotel, New York, Dec. 3.

Tale Ends

LEVER BROTHERS have hit the Chicago market with a bang in introducing their new bar detergent, "Dove," we see by the papers. They say that druggists just didn't have time to unpack the stuff it sold so fast and they just handed it out to the customers right out of the shipping cases. And the news writers add the enlightening information that "Dove" is not really a soap at all but is "a detergent with cold cream added." So, now the secret's out.

Complete luxury is about to come to the cosmetic trade. Cosmetics made from mink fat! It's a cinch to sell the mink pelts for luxury furs, but up until now the mink fat has been a complete waste. But along comes Dr. John M. Cross of the Rutgers College of Pharmacy out in N. J. and tells us that mink fat is hot stuff for skin creams, that it "easily penetrates skin crevices (whatever they are) without leaving a greasy film or staining clothing." That's because the mink lives on vitamins, ground beef and cod liver oil. Hot dog! what next?

Cy Kimball, well known executive vice-prez of Foster D. Snell, Inc., completed thirty years with the firm recently. An issue of the "Snell's Picayune Times" with Cy's pix at age six months on the cover was put out for the occasion, also lots of other pictures inside including the Kimball kids. And for the first time, Cy's real, full and complete name was revealed, Cyril Steere Kimball. To his cohorts in the Snell organization, he is known also as "Cereal." Cy is very active in the Wax and Floor Finishes Division of CSMA among others.

Remember that government booklet on "Tools for Food Preparation and Dishwashing" which General Eisenhower took for such a sleigh-ride in the political campaign of 1952? And boomed the sale of the booklet so that it had to be reprinted a couple of times? Well, now we got a new one, but we are certain it will not be criticized in the current election campaign. It's entitled "Detergents for Home Laundering" and it has been prepared by the Dept. of Agriculture. If you want a copy, send a nickel to the Government Printing Office, Washington, D. C.

E. A. Crothall, managing director of Commercial Cleaners Limited of Christchurch, New Zealand, was a recent visitor to our offices. Mr. Crothall was in the U.S. studying latest cleaning methods, materials and equipment. His company which does contract cleaning in New Zealand employs 1,400 persons in their cleaning and maintenance operations. His travel plans called for a visit to Sweden, Germany and England and a return to the U.S. en route to New Zealand.

How to wash a cat! This intriguing

subject was covered in the Los Angeles Times recently by Marian Manners. First, you get said cat to stand up in the pan of water, of course, wearing heavy canvas gloves. (You wear the gloves, not the cat.) Second, you wash him with liquid soap and eucalyptus oil "so as not to irritate his skin,"—still wearing gloves. Third, if the cat's still around and you're still wearing gloves, you rinse him with warm water and wrap in a turkish towel. If the cat lives, the bath was a success. What the eucalyptus is for, we're still trying to find out.

P & G is test marketing a new Camay toilet soap, a pink bar both plain and with hexachlorophene. The new pink baby is foil wrapped and thereby hangs a tale. The trend is apparently to foil wraps for toilet soaps. The success of Lux in foil seems to have made a dent on competitors. Woodbury's beauty bar is going to foil and Colgate is toying with the idea. Lever's Dove, the synthetic bar is foil wrapped. So, if you can't lick 'em, jine 'em!

A new coin has just been minted by the Fuld "mint." (The Fuld, Melvin, prez of Fuld Bros., Baltimore, and son George, instructor in chemistry at MIT, are numismatians of note. In plain English, this means coin collectors.) Anyway, George is the father of a boy, Robert Alan Fuld, born Sept. 18 at Boston. Mother is Phyllis Fuld. And this makes Mel Fuld, a grandpappy for the first time. The Fuld's announcement of the new arrival was headed "New issue from the G. Fuld mint." Well, good luck, Robert, old kid!

A perfume manufacturer has just given an order to Todd Co., printers of bank checks for some checks suitably perfumed with one of the manufacturer's fragrances. The payee line reads "pay to the odor of" and is followed by the number of "scents." Hot dog! What next?

Via our grapevine, which in this case spans clear across the Atlantic, we hear that Al Stepan (Stepan Chemical Co., Chicago) has been taking a quiet look-see at the synthetic detergent situation in Europe and parts East. The latter includes Russia, where we understand Senor Stepan has been investigating detergent progress in the "workers' paradise." Our scouts tell us also that there has been quite a revolution in packaging in the past couple of years in Europe, with a strong trend toward single-shot polyethylene envelopes for packaging liquid detergent type shampoos.

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